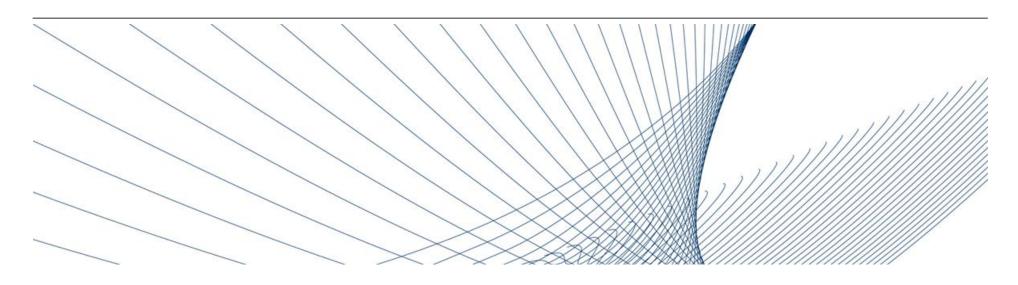
## **VOLKSWAGEN**

AKTIENGESELLSCHAFT



Proposed Emissions Modification, Part A: EA288 GEN3 MY 2015
Test Group FVGAV02.0VAL
Automatic and Manual Transmissions

Repair Instructions

August 2nd, 2016

Related Appendix B paragraphs

4.3.13



# **Document summary and structure**

#### Summary of this document

This documents provides repair instructions and dealer communications for Volkswagen and Audi Dealers.

With the emission modification, the dealers are also instructed to check the DPF for damages and propose a replacement if damaged.

#### Structure of this document

- ▶ Repair instructions Volkswagen
- ▶ Repair instructions Audi

The content of this document shall be regarded as Confidential Business Information



# Content

# **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen

Repair Instructions Audi





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA288 Gen3 MY 2015 - FVGAV02.0VAL

#### Overview of submissions

#### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

# End products and underlying measurements

- ► Repair instructions Volkswagen
- Repair instructions Audi
- Work order to detect damaged DPFs



# Content

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 

Repair Instructions Audi

# Emissions Recall Code: 23Q3

CONFIDENTIAL DRAFT 07/27/2016

Subject

2.0L TDI Engine (GEN 3) Emissions Control Software

**Release Date** 

MONTH XX, 2016

**Affected Vehicles** 

U.S.A. & CANADA: 2015 MY Volkswagen 2.0L TDI

Country	Model Year	Vehicle Carline
	2015	Jetta
		Beetle
LICA		Beetle Convertible
USA		Passat
		Golf
		Golf SportWagen
CAN	2015	Jetta
		Beetle
		Passat
		Golf
		Golf Wagon

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the only valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system software, install a supplemental Vehicle Emissions Control Information label, Fuel Economy Label, and Emissions Recall Completion Label. New and Used vehicles sold in the U.S. must also attach a new Fuel Economy Label to the window.

#### **Code Visibility**

On or about MONTH XX, 2016, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on <a href="https://www.vwhub.com">www.vwhub.com</a> & OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about MONTH XX, 2016, this campaign code will show open on affected vehicles in Elsa.

On or about MONTH XX, 2016, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

#### **Owner Notification**

Owner notification will take place on or about MONTH XX, 2016.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at www.vwhub.com.

If Customer Refuses Repairs Repair refusals <u>must</u> be documented following the specific process outlined below:

INSERT DETAILS OF CUSTOMER REFUSED REPAIR PROCESS HERE. . . WARRANTY TEAM TO DEVELOP SPECIFIC PROCESS FOR TDI RECALLS

**Additional Information** 

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed <u>before</u> <u>delivery to consumers</u>.

Fill out and affix Campaign Completion Label (CAMP 010 000) after work is complete. Labels can be ordered at no cost via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order. If customer refused campaign work:

- ✓ <u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.
- ✓ Canada dealers: Fax repair order to Warranty at (905) 428-4811.

	T		
Service Number	23Q3		
Damage Code	0099		
Parts Vendor Code	wwo		
Claim Type	Sold vehicle: 7 10		
	Unsold vehicle: 7 90		
Vehicle Wash/Loaner	Do not claim wash/loane	er under this action	
Criteria I.D.	01		
	Perform software update, install a supplemental Vehicle Emissions Control Information label, Fuel Economy Label, and Emissions Recall Completion Label.  *New and Used vehicles sold in the U.S. must also attach a new Fuel Economy Label to the window.  Labor operation: 2360 25 99  50 T.U.		
	Part number Description Quantity		
	03L 010 005 J	Vehicle Emissions Control Information Label	1
	CAMP TDI 2016_3A	TDI Campaign Completion Label	1
	TBD	*Fuel Economy Label	1 (if necessary)

## **Campaign Work Procedure**



## U NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

#### **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 J	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_3A	TDI Campaign Completion Label
1 (if necessary)	TBD	Fuel Economy Label

#### **Required Tools**



- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



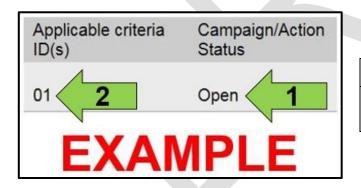
GRX3000VAS – Battery Tester/Charger (or equivalent)

#### **Repair Instruction**

#### **Section A - Check for Previous Repair**

i TIP

If Campaign Completion label is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.

Proceed to Section B.

#### Section B – Repair Procedure (All Criteria)



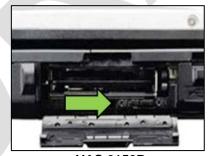
#### U NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are

- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



**VAS 6150B** (Right side behind WIRELESS door)



**VAS 6150C** (Left side behind SC/EX door)

#### **MARNING**

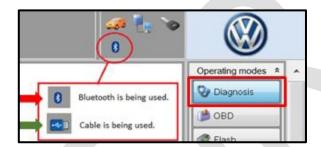
Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

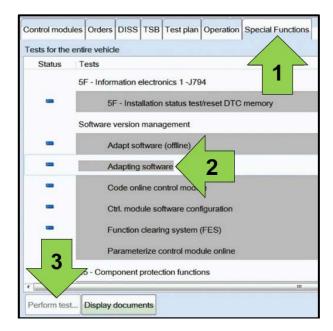
#### i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: Software Version Management (SVM) Operating Instructions.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - o If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.





Property and Committee and Com



• Once the GFF scan is complete, select "Special functions" <arrow 1>, then "Adapting software" <arrow 2>, then select "Perform test" <arrow 3>.

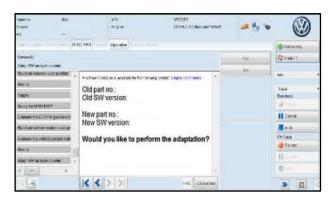
• Select the appropriate option to update "through measures code" <arrow>.

#### U TIP

Read this screen carefully. The option to update software through measures code is **NOT** always selection #1 on this screen.

- Enter "XXXX" <as shown>.
- Select "Accept" <arrow>.

Software Change Table			
Original ECM Part Number Original Software Level		Updated ECM Part number	Update Software Level
	All		

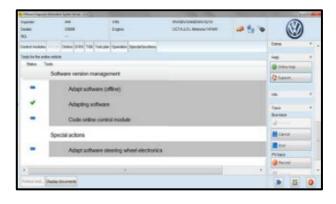






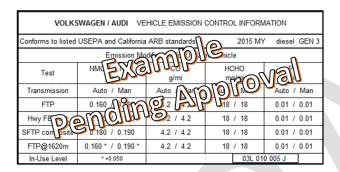
- Compare the old and new part number and software version.
  - If the old and new software versions displayed are the same Work Complete, proceed to Section C.
  - If the old and new software versions displayed are different continue to next step.
- If the old and new software versions displayed are different, Select "Yes" and follow the on-screen prompts to complete the test plan.
- Reference the ECM Software Change Table above for affected ECMs.
- When the SVM update is complete a confirmation message is displayed <as shown>.
- Select "Complete/Continue" <arrow>.

Switch the ignition off, then select "Complete/Continue" <arrow>.



- The green check mark indicates the test plan was successfully carried out.
- Release the parking brake.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Proceed to Section C.

#### Section C – Supplemental Vehicle Emissions Control Information Label



# Install Supplemental Vehicle Emissions Control Information Label

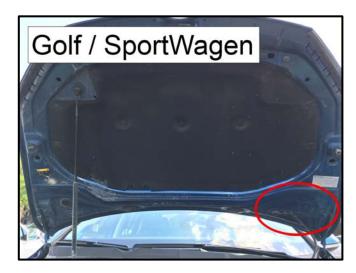


- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.

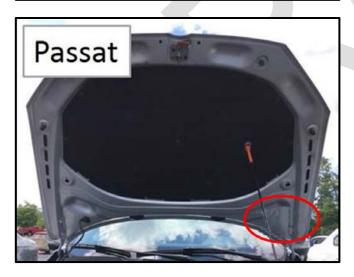


- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 J, in the location shown <circle>.

#### **Proceed to Section D**



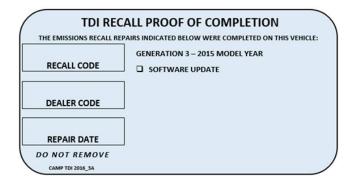




**Section D – Campaign Completion Label** 

**Install Campaign Completion Label** 

i TIP



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the Campaign Completion Label is to be installed.
- Fill out and install the TDI Campaign Completion Label, part number CAMP TDI 2016\_3A.
- Close the hood.

Proceed to Section E (California only).

#### Section E – California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon request.</u>

**Proceed to Section F** 

#### Section F - Attach Fuel Economy Label

#### **INSERT INSTRUCTIONS and PHOTOS HERE**

Proceed to Section G

#### **Section G – Recall Repair Documentation Requirements**

INSERT INSTRUCTIONS/PHOTOS HERE-REFERENCE SPECIAL BULLETIN

#### ALL WORK IS COMPLETE





# **Content**

Summary of relevant Appendix B paragraphs

Repair Instructions Volkswagen

**Repair Instructions Audi** 

# Emissions Recall Code: 23Q4

## CONFIDENTIAL DRAFT 07/27/2016

Subject

2.0L TDI Engine (GEN 3) Emissions Control Software

**Release Date** 

MONTH XX, 2016

**Affected Vehicles** 

U.S.A. & CANADA: 2015 MY Audi A3 2.0L TDI

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

**Problem Description** 

The Environmental Protection Agency and California Air Resources Board have determined that Audi A3 vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

**Corrective Action** 

Install updated emissions control system software, install a supplemental Vehicle Emissions Control Information label, Fuel Economy Label, and Emissions Recall Completion Label. New and Used vehicles sold in the U.S. must also attach a new Fuel Economy Label to the window.

**Code Visibility** 

On or about MONTH XX, 2016, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on <a href="https://www.accessaudi.com">www.accessaudi.com</a> & OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about MONTH XX, 2016, this campaign code will show open on affected vehicles in Elsa.

On or about MONTH XX, 2016, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.audiusa.com">www.audiusa.com</a>.

**Owner Notification** 

Owner notification will take place on or about MONTH XX, 2016.

Emissions Campaigns Requirements (CALIFORNIA ONLY) The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.accessaudi.com">www.accessaudi.com</a>.

If Customer Refuses Repairs Repair refusals must be documented following the specific process outlined below:

INSERT DETAILS OF CUSTOMER REFUSED REPAIR PROCESS HERE... WARRANTY TEAM TO DEVELOP SPECIFIC PROCESS FOR TDI RECALLS

**Additional Information** 

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed <u>before</u> delivery to consumers.

Fill out and affix Campaign Completion Label (INSERT RECALL SPECIFIC PART #) after work is complete.

Labels can be ordered at no cost via the Compliance Label Ordering portal at www.accessaudi.com.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order. If customer refused campaign work:

- ✓ <u>U.S. dealers:</u> Submit the request through Audi Warranty Online under the <u>Campaigns/Update</u> option.
- ✓ Canada dealers: Fax repair order to Warranty at (905) 428-4811.

2			
Service Number	23Q4		
Damage Code	0099		
Parts Vendor Code	002		
Claim Type	Sold vehicle: 7 10		
	Unsold vehicle: 7 90		
Vehicle Wash/Loaner	Do not claim wash/loaner under this action		
Criteria I.D.	01		
	Perform software update, install a supplemental Vehicle Emissions Control Information label, Fuel Economy Label, and Emissions Recall Completion Label.  *New and Used vehicles sold in the U.S. must also attach a new Fuel Economy Label to the window.  Labor operation: 2360 25 99 Time stated on diagnostic protocol (max 50 T.U.)		
	Part number	Description	Quantity
	03L 010 005 J	Vehicle Emissions Control Information Label	1
	CAMP TDI 2016_3A	TDI Campaign Completion Label	1
	TBD	*Fuel Economy Label	1 (if necessary)

#### **Campaign Work Procedure**



## U NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

#### **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 J	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_3A	TDI Campaign Completion Label
1 (if necessary)	TBD	Fuel Economy Label

#### **Required Tools**



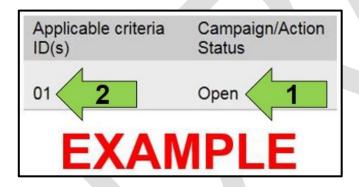
- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



• GRX3000VAS – Battery Tester/Charger (or equivalent)

#### **Repair Instruction**

#### **Section A - Check for Previous Repair**



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

## i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>. If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.

Proceed to Section B.

#### Section B – Repair Procedure (All Criteria)

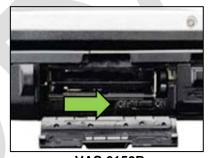
#### U NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



**VAS 6150B** (Right side behind WIRELESS door)



**VAS 6150C** (Left side behind SC/EX door)

#### **WARNING**

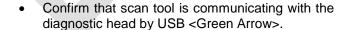
Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

#### i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

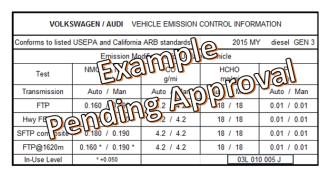
- · Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.

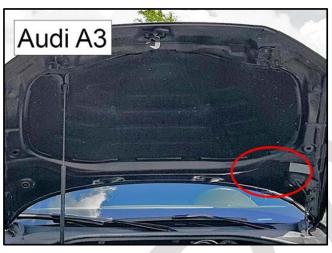


- If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- From the home screen of the scan tool select Flash
- Follow the on-screen prompts.
- Select "SVM code input."
- Enter SVM code XXXXX.
- Follow the on-screen prompts.
- Proceed to Section C.



#### Section C – Supplemental Vehicle Emissions Control Information Label





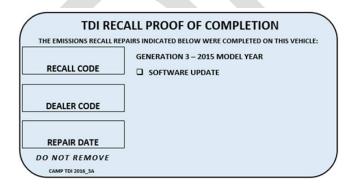
# Install Supplemental Vehicle Emissions Control Information Label



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in location shown.
- Photo documentation of label installed is required.
- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 J, in the location shown.

**Proceed to Section D** 

#### **Section D – Campaign Completion Label**



#### **Install Campaign Completion Label**

i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the Campaign Completion Label is to be installed.
- Fill out and affix TDI Campaign Completion Label, part number CAMP TDI 2016\_3A.
- · Close the hood.

#### Section E – California Only Requirements

# **CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification**

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall — Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.accessaudi.com">www.accessaudi.com</a>.

i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon request.</u>

Proceed to Section F

#### Section F - Attach Fuel Economy Label

#### **INSERT INSTRUCTIONS and PHOTOS HERE**

Proceed to Section G

#### Section G – Recall Repair Documentation Requirements

INSERT INSTRUCTIONS/PHOTOS HERE-REFERENCE SPECIAL BULLETIN

Proceed to Section H

#### Section H – Campaign Stamp

I certify that this campaign has been performed in strict accordance with the applicable Audi repair procedure.

SAGA Code:\_\_\_\_\_\_
Technician: \_\_\_\_\_\_
Date: \_\_\_\_\_

Item#: AUD4927ENG

OR

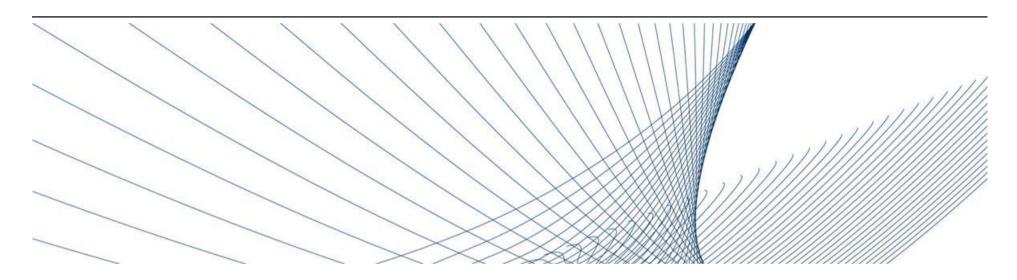
Je certifie que cette
campagne de rappel a été
exécutée suivant les strictes
directives de réparation
d'Audi

Code de SAGA:
Technicien:

Item # AUD4927FRE

- Once the campaign has been completed, the technician should stamp the repair order.
- Stamps are available for ordering through the Compliance Label Ordering Portal (item# AUD4927ENG or AUD4927FRE).
- ALL WORK IS COMPLETE.

# VOLKSWAGEN AKTIENGESELLSCHAFT



# Proposed Emissions Modification, Part A: EA288 GEN3 MY 2015 Test Group FVGAV02.0VAL Automatic and Manual Transmissions

Repair Instructions (Update)

November 7th, 2016

# Related Appendix B paragraphs

4.3.13





# **Document summary and structure**

#### **Summary of this document**

This documents provides repair instructions and dealer communications for Volkswagen and Audi Dealers.

With the emission modification, the dealers are also instructed to check the DPF for damages and propose a replacement if damaged.

#### Structure of this document

- ▶ Repair instructions Volkswagen
- ▶ Repair instructions Audi

The content of this document shall be regarded as Confidential Business Information





# Overview over changes made compared to document submitted on September 30th

Pages	Topic	Changes
XXX	Repair instructions	<ul> <li>Updated repair instructions</li> </ul>





# **Content**

# **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen

Repair Instructions Audi





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA288 Gen3 MY 2015 - FVGAV02.0VAL

#### **Overview of submissions**

#### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

# End products and underlying measurements

- Repair instructions Volkswagen
- Repair instructions Audi



# **Content**

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 

Repair Instructions Audi

# Emissions Recall Code: 23Q3

## CONFIDENTIAL DRAFT 11/7/2016

Subject

2.0L TDI Engine (GEN 3) Emissions Control Software – <u>USA ONLY</u>

**Release Date** 

Month XX, 2016

**Affected Vehicles** 

U.S.A.: 2015 MY Volkswagen 2.0L TDI

Country	Model Year	Vehicle Carline
USA	2015	Jetta
		Beetle
		Beetle Convertible
		Passat
		Golf
		Golf SportWagen

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system software, install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.

#### **Code Visibility**

On or about Month XX, 2016, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on <a href="www.vwhub.com">www.vwhub.com</a> & OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about Month XX, 2016, this campaign code will show open on affected vehicles in Elsa.

On or about Month XX, 2016, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

#### **Owner Notification**

Owner notification will take place on or about Month XX, 2016.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed <u>before</u> <u>delivery to consumers</u>.

Fill out and affix TDI Emissions Modification Label (CAMP TDI 2016\_3A) after work is complete.

Labels can be ordered via the Compliance Label Ordering portal at www.vwhub.com.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order. If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.

GIOT GGGIOTO. GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG		
Service Number	23Q3	
Damage Code	0099	
Parts Vendor Code	wwo	
Claim Type	Sold vehicle: 7 10	
	Unsold vehicle: 7 90	
Vehicle Wash/Loaner	Do not claim wash/loaner under this action	
Criteria I.D.	01	
	Perform software update, install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.	
	Labor operation: 2360 25 99 75 T.U.	



# ① NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

# **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 J	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_3A	TDI Emissions Modification Label

# **Required Tools**



- VAS6150X Diagnostic Tester (or equivalent)
- VAS5054X Remote Diagnosis Head (or equivalent)



GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- Insert Link Here.

# i TIP

This web application is compatible with desktops and laptops running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

# **UNOTE**

#### RISK of Non-payment!

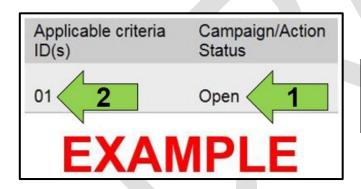
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

#### **Repair Instruction**

#### Section A - Check for Previous Repair

i TIP

If the TDI Emissions Modification Label (CAMP TDI 2016\_3A) is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

# i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.

Proceed to Section B.

#### Section B – Repair Procedure



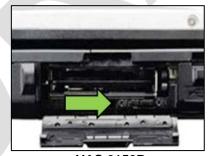
# () NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are

- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



**VAS 6150B** (Right side behind WIRELESS door)



**VAS 6150C** (Left side behind SC/EX door)

# **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

# i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

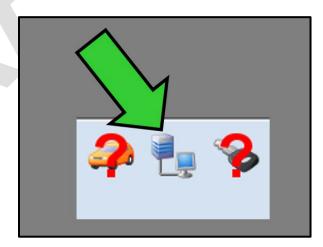
The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

#### Things to check before starting Software Version Management (SVM):

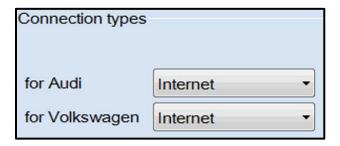
✓ Verify your network connection <arrow> either thru LAN or WIFI by checking the connection icon (lower right of the home screen).



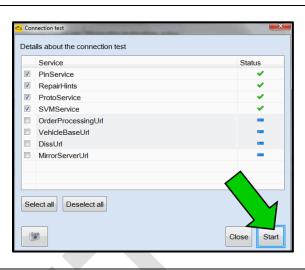
✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

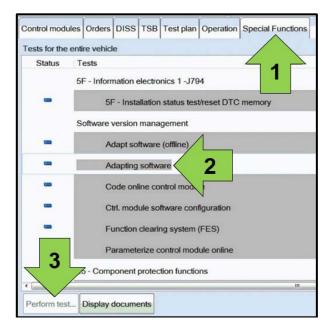


✓ Start a connections test <arrow> and verify that all connections pass.



- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150X Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.





Control modules

Control modules

Tests for the enfire vehicle

Status

Tests

Adapt Mechabronics software

Adapt software, diesel, exhaust EA189 action 23Q3

Production status documentation part number on the reptivement airbag module/gas generator

Reset the assembly sate test/DTC memory

Software version management

Adapting software

Code online control module

Ctrl. module software configuration



 Once the GFF scan is complete, select "Special functions" <arrow 1>, then "Adapting software" <arrow 2>, then select "Perform test" <arrow 3>.

## • NOTE

#### RISK of Improper Repair!

- **DO NOT SELECT** the test plan for "Adapt software, diesel, exhaust EA189 action 23Q3" <red arrow>.
- **ONLY SELECT** the test plan "Adapting software" <green arrow> to perform this repair.

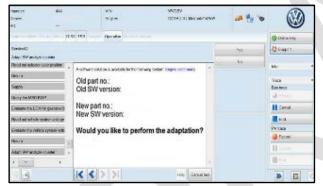
 Select the appropriate option to update "through measures code" <arrow>.

# i TIP

 Read this screen carefully. The option to update software through measures code is NOT always selection #1.



- Enter "3DEF" <as shown>.
- Select "Accept" <arrow>.

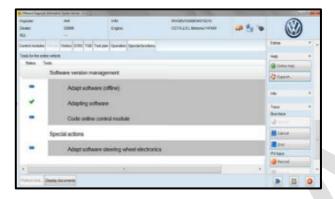




- Compare the old and new part number and software version.
  - If the old and new software versions displayed are the same Work Complete, proceed to Section C.
  - If the old and new software versions displayed are different, Select "Yes" and follow the on-screen prompts to complete the test plan.
- When the SVM update is complete a confirmation message is displayed <as shown>.
- Select "Complete/Continue" <arrow>.

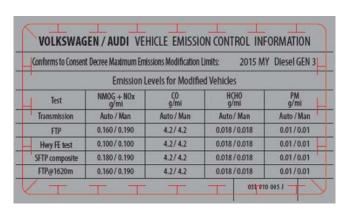


• Switch the ignition off, then select "Complete/Continue" <arrow>.



- The green check mark indicates the test plan was successfully carried out.
- Release the parking brake.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Proceed to Section C.

#### Section C – Supplemental Vehicle Emissions Control Information Label



# Install Supplemental Vehicle Emissions Control Information Label



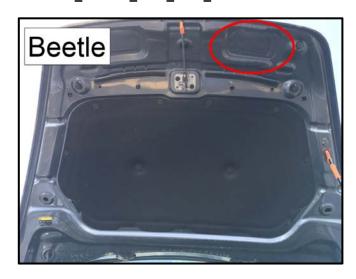
- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.

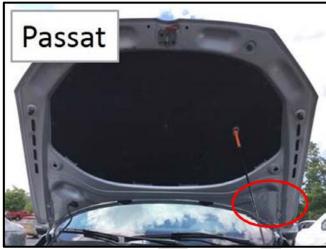


- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 J, in the location shown <circle>.

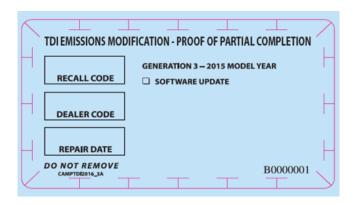
**Proceed to Section D** 







#### Section D – TDI Emissions Modification – Proof of Partial Completion Label



#### **Install TDI Emissions Modification Label**



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification Label is to be installed.
- Fill out and install the TDI Emissions Modification Label, part number **CAMP TDI 2016\_3A**.
- Apply clear overlay (provided).
- Close the hood.

Proceed to Section E (California only).

# Section E – California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.



Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon</u> request.

#### **Proceed to Section F**

#### Section F – Service Modification Documentation Requirements



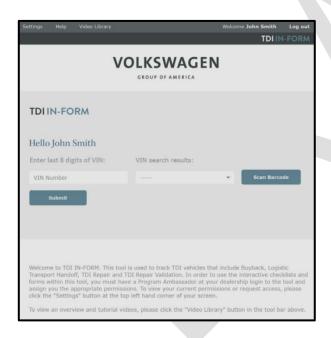
#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.



To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

Enter the "TDI IN-FORM" tool <arrow>

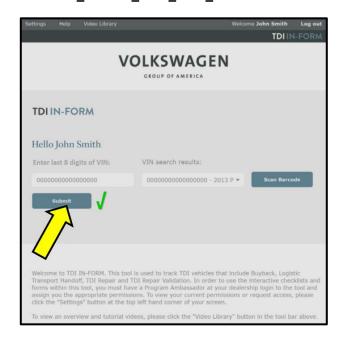


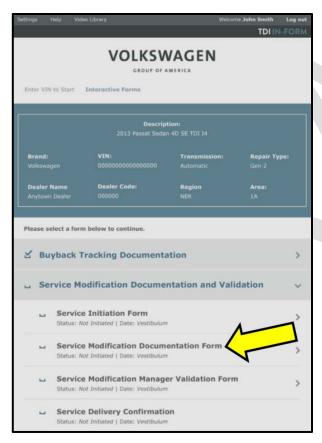
• Enter the VIN for the vehicle that requires documentation.



The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.





# i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.



#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### **All Work COMPLETE**





# **Content**

Summary of relevant Appendix B paragraphs

Repair Instructions Volkswagen

**Repair Instructions Audi** 





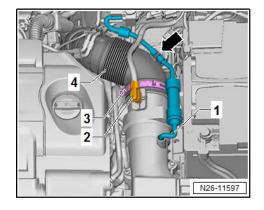
# **Repair Instructions Audi**

Repair instruction for Audi GEN3 vehicles identical to Volkswagen version outlined previously in this document, therefore this document is not attached again in this submission package



# Retrofitting VW 324/325 Beetle and VW361 Jetta

- Release and disconnect connector -2-. Pull off vacuum line
   -1- and unclip it from intake hose -arrow-.
- Loosen spring-type clip -3- using spring-type clip pliers
   -VAS 6362-.
- Pull intake hose -4- from air mass meter.

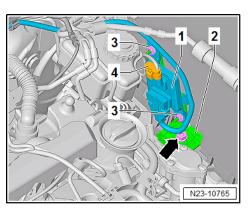


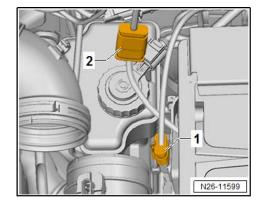
 Release and pull off electrical connector -4- on control unit for NOx sender -1-.

# Note

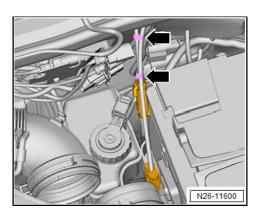
The lower end of the new wiring harness is enclosed in a plastic bag to protect it from soiling. Do not remove this protection until immediately before fitting.

- Check that all connectors are clean and blow out with compressed air as needed.
- Plug in and secure connector of new wiring harness to control unit for NOx sender -1- as well as the wiring harness itself -2-.



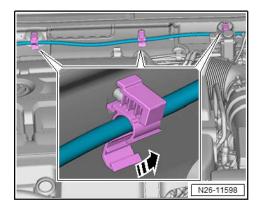


 Secure wiring harness with cable ties at indicated points -arrows-.

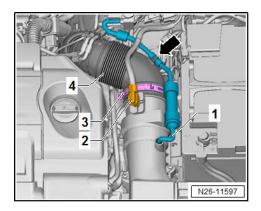




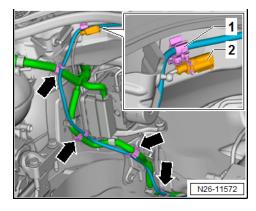
- Secure adapter wiring harness along plenum chamber bulkhead using cable clips 1J0.971.939.C to heat shield as shown.
- If it has not already been done, close tabs of cable clips in -direction of arrow- until they engage.



- Push on intake hose -4- and secure with clip 3-.
- Push on connector -2- and vacuum line -1-. Clip in vacuum line -arrow-.

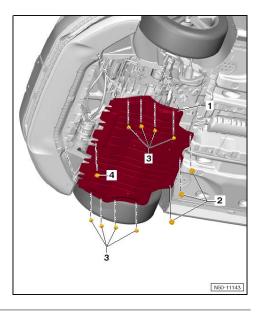


- Substitute supplied combination bracket 3C0.971.843 -1- in place of production bracket and secure connector -2- in bracket again.
- Route adapter wiring harness from right suspension turret downwards. Secure to main wiring harness with clips -arrows-.



#### Removing noise insulation

- Unscrew bolts -2-, -3- and -4-.
- Pull noise insulation -1- backwards out of front bumper cover.





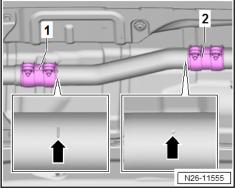
#### **Cutting exhaust pipe**

# (!) Caution!

Do not use a grinder or similar swarf-producing tool to cut exhaust pipe.

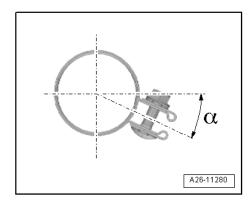
- Cut exhaust pipe -2- using chain pipe cutter -VAS 6254along dashed line. Dimension -a- = 100mm
- Loosen clamp -1- and push to rear. Remove exhaust pipe -2-.
- Slide new clamps 1K0.253.141.S onto exhaust pipe.
- Position exhaust pipe so that attached arrow marking points in direction of travel and perpendicularly downwards to ground.
- Position clamps -1- and -2- longitudinally on exhaust pipe.
   When doing this, observe indented markings -arrows- on exhaust pipe.

# 2 a N26-11554



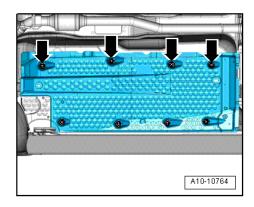
#### Installation position of clamp

- Install clamp at angle shown in illustration.
- Angle -α- = approx. 45°
- · Bolted connection facing towards right
- Nuts may also face downwards.
- Tighten clamp nuts to 30 Nm.



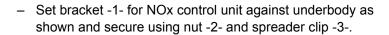
#### Installing control unit bracket

 Unscrew nuts -arrows- and pull down underbody cladding on right slightly.

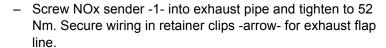


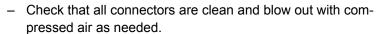


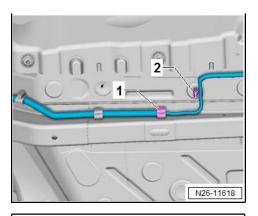
- Remove clip -1- for corrugated tube from body, open and remove.
- Pull clip -2- off welded bolt.

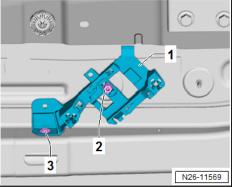


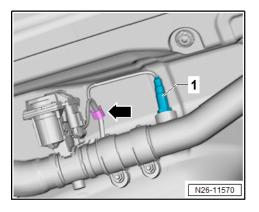
Tighten nut -2- to 2 Nm.



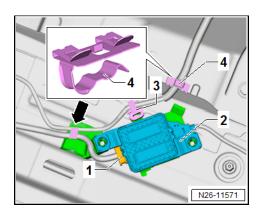








 Connect new adapter wiring harness -1- to control unit for NOx sender -2-.





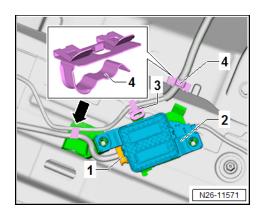
(!) Caution!

After connecting wiring harness to control unit for NOx sender, spray entire control unit with wax spray D 322 100 M2. Under no circumstance may the wax spray moisten the contacts of the control unit.

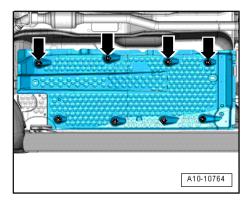
# Note

Do not locate the length compensation of the wire in the area between the clips on the bracket.

- Clip control unit into bracket, secure clip -3- with cable ties and insert previously removed clip for corrugated tube -arrow- in bracket.
- Substitute retainer 1K0 971 842 G -4- included in set for production retainer. Secure wiring on it.

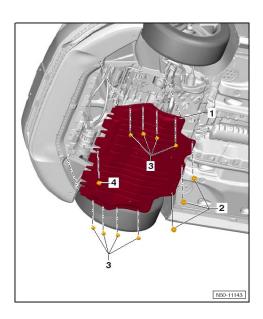


 Press right underbody cladding upward slightly and tighten nuts -arrows- to 2 Nm.



#### Installing noise insulation

- Push noise insulation -1- forward into front bumper cover.
- Screw in new bolts -2- and tighten to 6 Nm.
- Screw in bolts -3- and -4- and tighten to 2 Nm.





# Starting flashing processes for engine control unit

- Connect diagnostic tester and select Diagnosis mode.
- Select Start diagnosis function and identify vehicle.

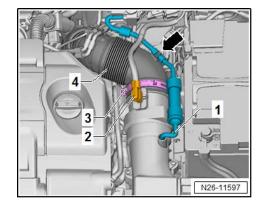
After identification of control units, "Guided fault finding" is started automatically.

- Follow instructions on screen.
- Select function
   Adapt software, diesel exhaust EA189/EA288 Action 23XX
   in Special functions mode.
- Then follow instructions on screen.

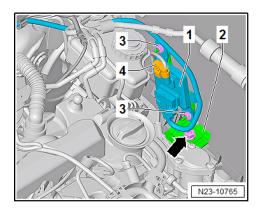


# **Retrofitting VW 411 Passat NMS**

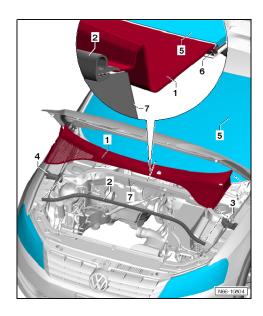
- Release and disconnect connector -2-. Pull off vacuum line
   -1- and unclip it from intake hose -arrow-.
- Loosen spring-type clip -3- using spring-type clip pliers
   -VAS 6362-.
- Pull intake hose -4- from air mass meter.



 Release and pull off electrical connector -4- on control unit for NOx sender.



Pull off seal -2- along entire length of plenum chamber covers -1-.

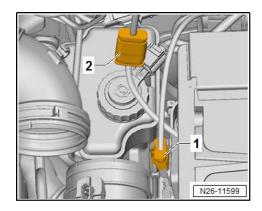




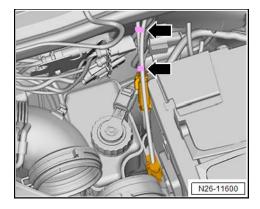
# Note

The lower end of the new wiring harness is enclosed in a plastic bag to protect it from soiling. Do not remove this protection until immediately before fitting.

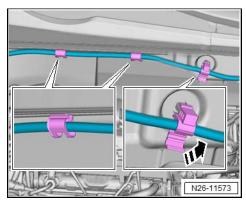
- Check that all connectors are clean and blow out with compressed air as needed.
- Plug in and secure connector of new wiring harness to control unit for NOx sender -1- as well as the wiring harness itself -2-.



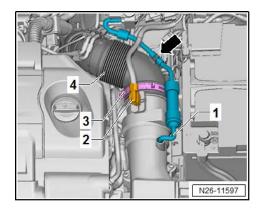
 Secure wiring harness with cable ties at indicated points -arrows-.



 Secure adapter wiring harness to heat shield along plenum chamber bulkhead using cable clips 1J0.971.939.C as shown.

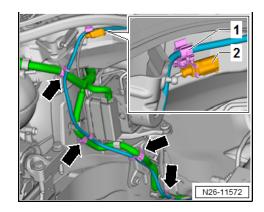


- Push on intake hose -4- and secure with clip 3-.
- Push on connector -2- and vacuum line -1-. Clip in vacuum line -arrow-.

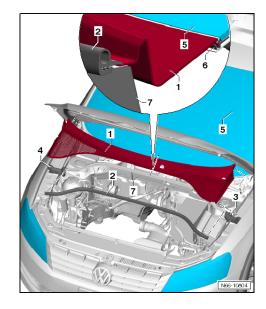




- Substitute supplied combination bracket 3C0.971.843 -1- in place of production bracket and secure connector -2- in bracket again.
- Route adapter wiring harness downwards from suspension turret and secure to main wiring harness using clips -arrows-.

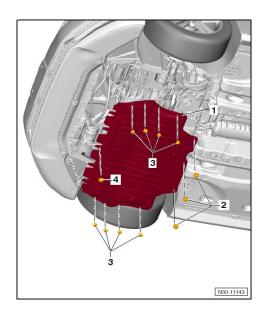


- Guide seal -2- into installed moulded foam elements -3- and
   -4- as far as it will go.
- Push seal -2- onto plenum chamber cover -1-.



#### Removing noise insulation

- Remove bolts -2-, -3- and -4-.
- Pull noise insulation -1- towards the rear and out of front bumper cover.



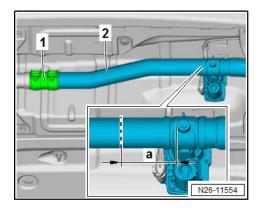


#### **Cutting exhaust pipe**

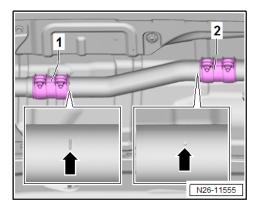
# (!) Caution!

Do not use a grinder or similar swarf-producing tool to cut exhaust pipe.

- Cut exhaust pipe -2- using chain pipe cutter -VAS 6254along dashed line. Dimension -a- = 100mm
- Loosen clamp -1- and push to rear. Remove exhaust pipe -2-.

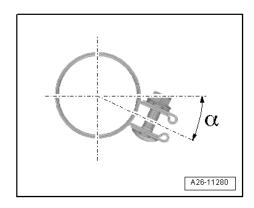


- Slide new clamps 1K0.253.141.S onto exhaust pipe.
- Position exhaust pipe so that attached arrow marking points in direction of travel and perpendicularly downwards to ground.
- Position clamps -1- and -2- longitudinally on exhaust pipe.
   When doing this, observe indented markings -arrows- on exhaust pipe.



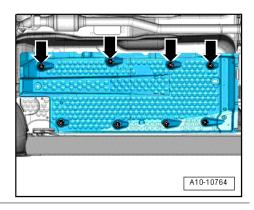
## Installation position of clamp

- Install clamp in illustrated angle position.
- Angle  $-\alpha$  = approx. 45°.
- · Bolted connection facing towards right.
- Nuts may also face downwards.
- Tighten clamp nuts to 30 Nm.



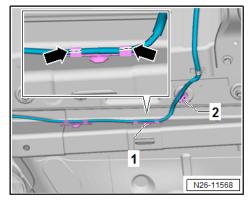
#### Installing control unit bracket

 Unscrew nuts -arrows- and pull down underbody cladding on right slightly.

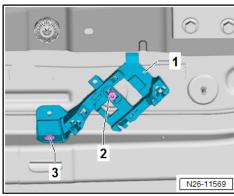




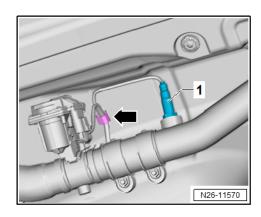
Unclip clip -1- and carefully separate from wiring harness
 -arrows-. Pull clip -2- off welded bolt.



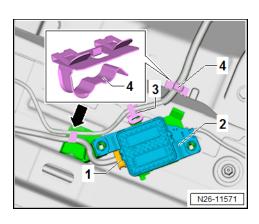
- Set bracket -1- for NOx control unit against underbody as shown and secure using nut -2- and spreader clip -3-.
- Tighten nut -2- to 2 Nm.



 Screw NOx sender -1- into exhaust pipe and tighten to 52 Nm. Secure wiring in retainer clips -arrow- for exhaust flap line.



- Route new adapter wiring harness between subframe and body along exhaust flap line and secure harness to line.
- Check that all connectors are clean and blow out with compressed air as needed.
- Connect new adapter wiring harness -1- to control unit for NOx sender -2-.





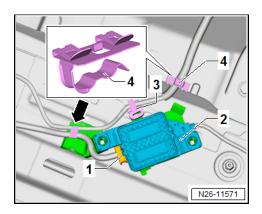


After connecting wiring harness to control unit for NOx sender, spray entire control unit with wax spray D 322 100 M2. Under no circumstance may the wax spray moisten the contacts of the control unit.

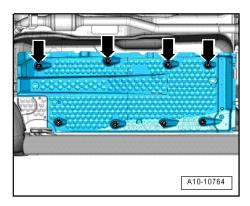
# Note

Do not locate the length compensation of the wire in the area between the clips on the bracket.

- Secure clip -3- using cable ties and attach cable tie over both wires -arrow-.
- Substitute retainer 1K0 971 842 G -4- included in set for production retainer. Secure wiring on it.

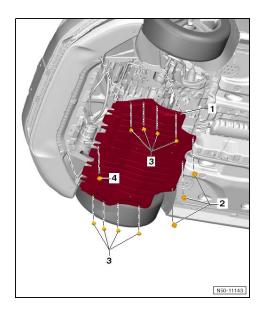


 Press right underbody cladding upward slightly and tighten nuts -arrows- to 2 Nm.



#### Installing noise insulation

- Push noise insulation -1- forward into front bumper cover.
- Screw in new bolts -2- and tighten to 6 Nm.
- Screw in bolts -3- and -4- and tighten to 2 Nm.





# Starting flashing processes for engine control unit

- Connect diagnostic tester and select Diagnosis mode.
- Select Start diagnosis function and identify vehicle.

After identification of control units, "Guided fault finding" is started automatically.

- Follow instructions on screen.
  - Select function

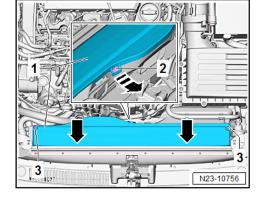
    Adapt software, diesel exhaust EA189/EA288 Action 23XX
    in Special functions mode.
- Then follow instructions on screen.



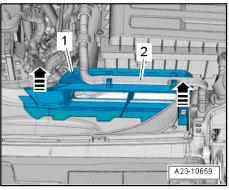
# 1 Retrofitting VW 370/372 Golf (Sportswagon)

#### Removing air filter housing

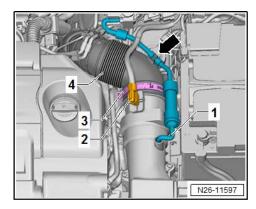
- Unscrew bolts -3-.
- Release catch -2- and remove cover -2-.
- Push cover -1- towards front out of retainers -arrows-.
- Remove cover -1-.



- Lay coolant hose -2- to one side.
- Release fasteners -arrows- and remove upper part of air duct -1-.
- Release and disconnect connector -2-. Pull off vacuum hose
   -1- and unclip from intake hose -arrow-.



- Loosen spring-type clip -3- using spring-type clip pliers
   -VAS 6362-.
- Pull intake hose off air mass meter.
- Pull hose for warm air intake off air filter housing.
- Pull air filter housing upwards out of fasteners and remove.

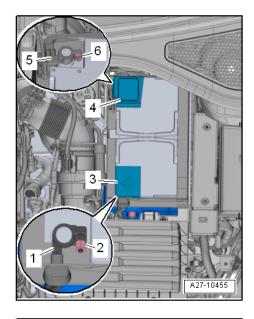


#### **Removing battery**

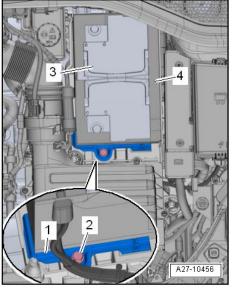
- Switch off ignition.
- Withdraw ignition key (if applicable).
- Open cover in heat insulation sleeve.



- Open cover -4- on battery negative terminal.
- Loosen nut -6- several turns, and disconnect battery clamp
   -5- of earth cable from negative battery terminal.
- Open cover -3- for positive battery terminal.
- Loosen nut -2- several turns, and disconnect battery clamp
   -1- of positive cable from positive battery terminal.

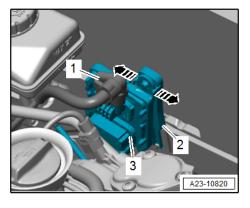


- Pull heat insulation sleeve -4- upwards slightly.
- Unscrew bolt -2- on securing bracket -1-.
- Remove securing bracket -1-.
- Pull battery -3- in direction of travel out of battery tray and lift out of engine compartment.



#### Removing battery tray

- Lay aside wiring harness on battery tray.
- Separate electrical connector -1-.
- Release catches -arrow-, remove control unit for NOx sender 1 -3- from bracket, and place it on the engine.





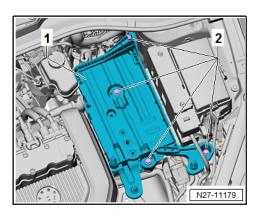
- Unscrew bolts -2-.
- Remove battery tray -1-.

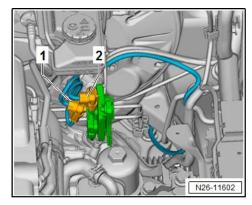
#### Routing adapter wiring harness

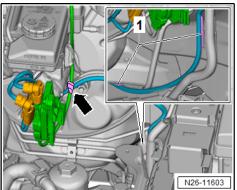
# Note

The lower end of the new wiring harness is enclosed in a plastic bag to protect it from soiling. Do not remove this protection until immediately before fitting.

- Check that all connectors are clean and blow out with compressed air as needed.
- In the engine compartment, disconnect original connector -1-on control unit for NOx sender and connect to adapter wiring harness
- Connect connector -2- of adapter wiring harness to control unit for NOx sender.
  - Route adapter wiring harness from left suspension turret to underbody. Clip it in at indicated places -1- on longitudinal member and secure using cable ties -arrow-.

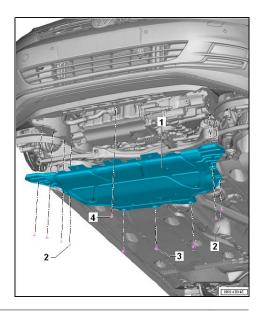






#### Removing noise insulation

- Unscrew bolts -2-, -3- and -4-.
- Pull noise insulation towards the rear and out of front bumper cover.



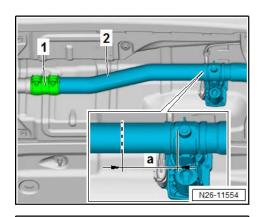


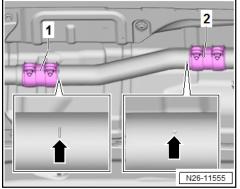
#### **Cutting exhaust pipe**

# (!) Caution!

Do not use a grinder or similar swarf-producing tool to cut exhaust pipe.

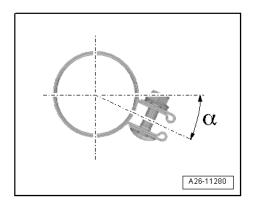
- Cut exhaust pipe -2- using chain pipe cutter -VAS 6254along dashed line. Dimension -a- = 100mm
- Loosen clamp -1- and push to rear. Remove exhaust pipe -2-.
- Slide new clamps 1K0.253.141.S onto exhaust pipe.
- Position exhaust pipe so that attached arrow marker points in direction of travel and perpendicularly downwards to ground.
- Position clamps -1- and -2- longitudinally on exhaust pipe.
   When doing this, observe indented markings -arrows- on exhaust pipe.





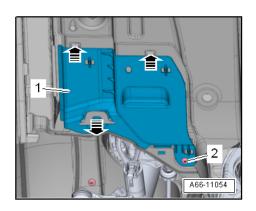
#### Installation position of clamp

- Install clamp at angle shown in illustration.
- Angle  $-\alpha$  = approx. 45°
- · Bolted connection facing towards right
- Nuts may also face downwards.
- Tighten clamp nuts to 30 Nm.



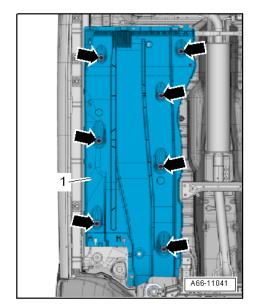
#### Installing NOx control unit

- Unscrew bolt -2-.
- Release retainers -arrows-.
- Pull front underbody cladding -1- backwards to direction of travel out of fasteners.





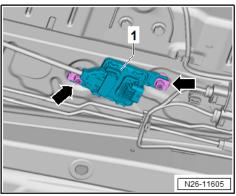
Unscrew nuts -arrows- and remove left middle underbody cladding.



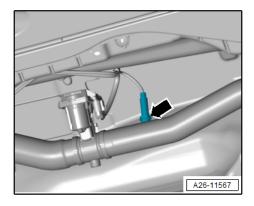
# (!) Caution!

Cover exposed connectors and spray entire surface of control unit with wax spray D 322 100 M2. Under no circumstance may the wax spray moisten the contacts of the control unit.

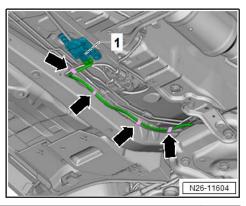
- Set control unit for NOx sender 2 on welded bolts to left on underbody.
- Push on nuts -arrows- to stop.



- Screw in NOx sender 2 -arrow- and tighten to 52 Nm.
- Secure wiring in retainer clips for exhaust flap line.



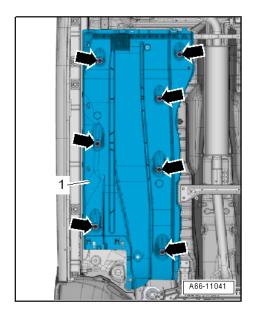
- Check that all connectors are clean and blow out with compressed air as needed.
- Connect adapter wiring harness on underbody to control unit for NOx sender 2 -1-.
- Place cable ties at the points marked in colour -arrows-.



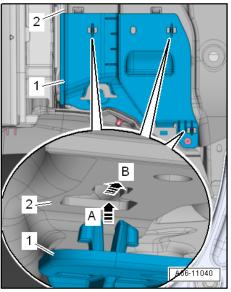


## Installing underbody cladding.

 Install left middle underbody cladding and tighten nuts -arrows- to 2 Nm.



- Insert mounting for front underbody cladding -1- in opening in middle underbody cladding -2- -arrow A-.
- Push front underbody cladding forwards in direction of travel until it engages audibly -arrow B-.





#### Installing noise insulation

- Push noise insulation forward into front bumper cover.

# Note

Slight discrepancies may need to be allowed for depending on the type of engine.

#### 1 - Long noise insulation

#### 2 - Bolt

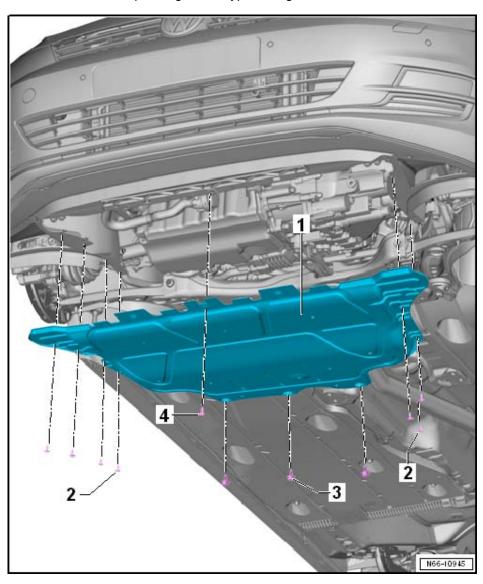
- ☐ Qty. 3 left
- ☐ Qty. 4 right
- □ 2.0 Nm

#### 3 - Bolt

- Micro-encapsulated; renew after each removal
- □ Qty. 3
- □ 6.0 Nm

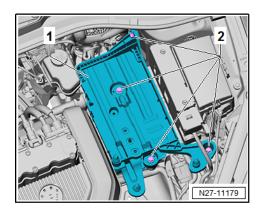
#### 4 - Bolt

- Qty. 1 on lock carrier
- □ 1 Nm



#### Installing battery tray

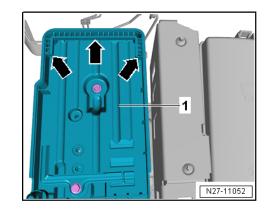
- Set battery tray -1- in place.
- Screw in bolts -2- and tighten to 9 Nm.
- Secure wiring harness on battery tray again.
- Install control unit for NOx sender in bracket on battery tray and secure with cable ties, as needed.





#### Installing battery

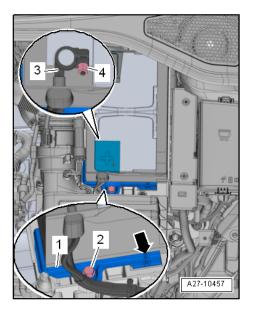
- Insert battery into battery tray -1- so that battery base strip lies against stop at bottom and sides -arrows-.
- It should no longer be possible to move battery towards rear or sides.



- Fit securing bracket -1-.
- Make sure that lug -arrow- on securing bracket -1- engages into recess in battery base strip.
- Tighten bolt -2- for securing bracket -1-.
- Ensure that battery is seated securely.

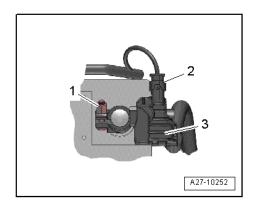
# With ignition and electrical equipment switched off, connect battery in the following sequence:

- Fit battery clamp -3- of positive cable to positive battery terminal "+".
- Tighten nut -4- to 6 Nm.



Observe the following when connecting the battery:

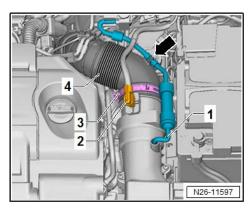
- If fitted, disconnect electrical connector -2- on control unit for battery monitoring -J367- -3-.
- Fit battery terminal clamp of earth cable to negative battery terminal "—" by hand.
- Tighten nut -1- to 6 Nm.
- If previously fitted, reconnect electrical connector -2- on control unit for battery monitoring -J367-.

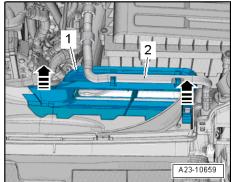




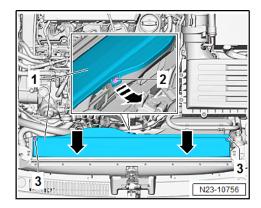
#### Installing air filter housing

- Insert air filter housing and press on fasteners.
- Connect hose for warm air intake to air filter housing.
- Connect air intake hose -4- to air mas meter and secure with spring-type clip -3-.
- Connect connector -2- and secure it. Push on vacuum hose
   -1- and clip onto intake hose -arrow-.
- Insert upper part of air duct -1- and push opposite
   -direction of arrow- into fasteners.





- Set cover -1- in place and push opposite -direction of arrowinto fasteners -2-.
- Tighten bolts -3- to 2 Nm.



- Switch on ignition.
- Check time and adjust, if necessary.
- Completely open windows, and then completely close them.
- Then, with windows closed, pull window regulator switches until relay can be heard to switch.
- Check convenience mode of the window regulators.

With convenience closing activated, windows must close fully without the need for holding the window regulator switch.



After the voltage supply has been switched back on, the vehicle must travel several meters before the ESP warning lamp goes out.



### Starting flashing processes for engine control unit

- Connect diagnostic tester and select Diagnosis mode.
- Select Start diagnosis function and identify vehicle.

After identification of control units, "Guided fault finding" is started automatically.

- Follow instructions on screen.
- Select function
   Adapt software, diesel exhaust EA189/EA288 Action 23XX
   in Special functions mode.
- Then follow instructions on screen.

# VOLKSWAGEN AKTIENGESELLSCHAFT



EA189 GEN2 MY 2012-2014 Automatic and Manual Transmission

Test Groups CVWXV02.0U4S, DVWXV02.0U4S, EVWXV02.0U4S

Repair Instructions

December 19th, 2016

Related Appendix B paragraphs

4.3.13





# **Document summary and structure**

Summary of this document	Structure of this document
This documents provides repair instructions and dealer communications for Volkswagen Dealers.	▶ Repair instructions Volkswagen
With the emission modification, the dealers are also instructed to check the DPF for damages and propose a replacement if damaged.	

The content of this document shall be regarded as Confidential Business Information



## **Content**

# **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA189 GEN2 MY 2012-2014 - Test Groups CVWXV02.0U4S, DVWXV02.0U4S, EVWXV02.0U4S

#### Overview of submissions

#### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

# End products and underlying measurements

▶ Repair instructions Volkswagen



## **Content**

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 

# Emissions Recall Code: 23U4

## **CONFIDENTIAL DRAFT 12/14/2016**

Subject

2.0L TDI Engine (GEN 2) Emissions Modification

**Release Date** 

MONTH XX, 2016

**Affected Vehicles** 

U.S.A. & CANADA: 2012-2014 MY Volkswagen Passat 2.0L TDI

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system parts and software, install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Completion Label.

#### **Code Visibility**

On or about MONTH XX, 2016, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on <a href="www.vwhub.com">www.vwhub.com</a> & OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about MONTH XX, 2016, this campaign code will show open on affected vehicles in Elsa.

On or about MONTH XX, 2016, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

#### **Owner Notification**

Owner notification will take place on or about MONTH XX, 2016.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed <u>before</u> <u>delivery to consumers</u>.

Labels can be ordered at no cost via the Compliance Label Ordering portal at www.vwhub.com.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order. If customer refused campaign work:

- ✓ <u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.
- ✓ Canada dealers: Fax repair order to Warranty at (905) 428-4811.

Service Number	23U4
Damage Code	0099
Parts Vendor Code	wwo
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90
Vehicle Wash/Loaner	Do not claim wash/loaner under this action
Criteria I.D.	01
	Perform software update, install a supplemental Vehicle Emissions Control Information label, and TDI Emissions Modification Label.
	Labor operation: 2360 25 99 90 T.U.

## **Campaign Work Procedure**



Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

## **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 H	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_2	TDI Emissions Modification Label

## **Required Tools**



- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- Insert Link Here.

### i TIP

This web application is compatible with desktops and laptops running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

## **UNOTE**

#### RISK of Non-payment!

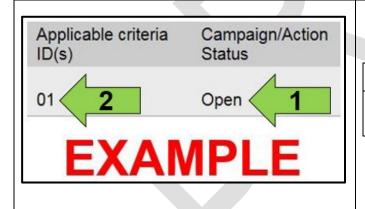
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

#### **Repair Instruction**

#### Section A - Check for Previous Repair

i TIP

If Campaign Completion label is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>. If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.



## ① NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

Proceed to Section B.

#### Section B - Check for Pre-existing MIL on conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue work procedure.

- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment are found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment are not found, continue work procedure.

**Proceed to Section C** 

#### Section C – Software Version Management

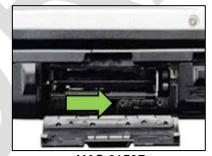
## U NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- ✓ The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to
    do so may cause the update to fail, which could result in damage to the control module. Control
    modules damaged by insufficient voltage will not be covered.
- ✓ The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- √ The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- ✓ If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
     It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

## **▲** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

## i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

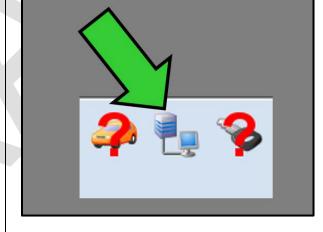
The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

Things to check before starting Software Version Management (SVM):

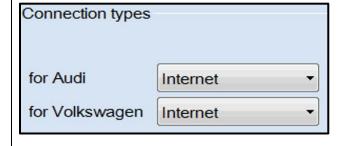
✓ Verify your network connection <arrow> either thru LAN or WIFI by checking the connection icon (lower right of the home screen).



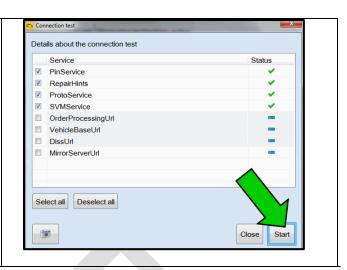
✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

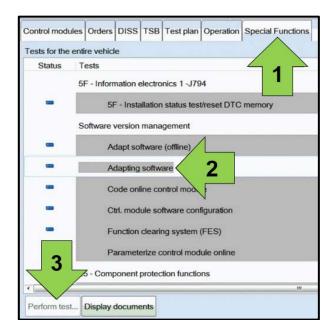


✓ Start a connections test <arrow> and verify that all connections pass.

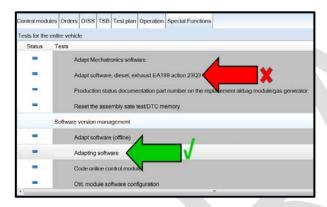


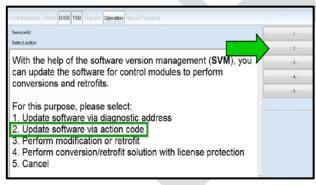
- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- · Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - o If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.





 Once the GFF scan is complete, select "Special functions" <arrow 1>, then "Adapting software" <arrow 2>, then select "Perform test" <arrow 3>.





## NOTE

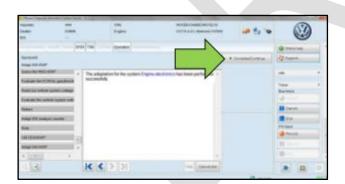
#### RISK of Improper Repair!

- DO NOT SELECT the test plan for "Adapt software, diesel, exhaust EA189 action 23Q3" <red arrow>.
- ONLY SELECT the test plan "Adapting software"
   <green arrow> to perform this repair.
  - Select the appropriate option to "Update software via action code" << arrow>.

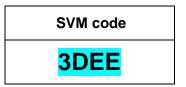
## i TIP

 Read this screen carefully. The option to update software via action code is NOT always selection #1.





• Enter SVM code as listed below.

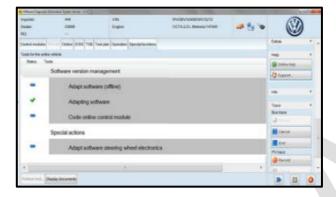


Select "Accept" <arrow>.

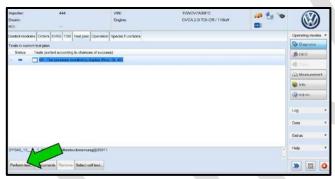
- Select "Complete/Continue" <arrow> to begin the software update process.
  - If the response indicates that the control modules are current, Flash Process is Complete, proceed to Section E.
  - o If the response indicates new software versions are available <as shown>, Select "Complete/Continue" and follow the on-screen prompts to complete the test plan.
- When the SVM update is complete a confirmation message is displayed <as shown>.
- Select "Complete/Continue" <arrow>.



• Switch the ignition off, then select "Complete/Continue" <arrow>.



• The green check mark indicates the test plan was successfully carried out.



## i TIP

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

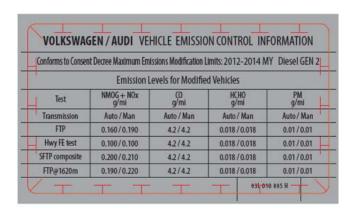
- If TPMS light illuminates, follow test plan "03 Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform test drive.



DO NOT drive vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

#### Proceed to Section D

#### Section D – Supplemental Vehicle Emissions Control Information Label

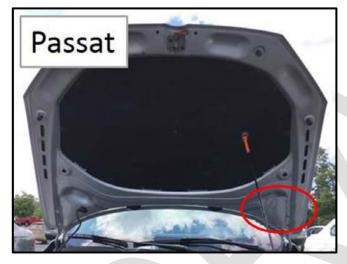


03L 010 005 H

# Install Supplemental Vehicle Emissions Control Information Label



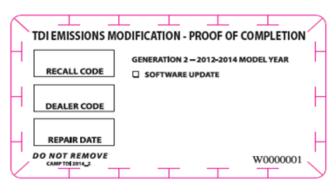
- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.



- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 H, in the location shown <circle>.

#### Proceed to Section E

#### Section E - Campaign Completion Label



CAMP TDI 2016\_2

#### **Install Campaign Completion Label**



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the Campaign Completion Label is to be installed.
- Fill out and install the TDI Campaign Completion Label, part number CAMP TDI 2016\_2.
- Close the hood.

Proceed to Section F (California only).

Proceed to Section G (All States except California).

### Section F - California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

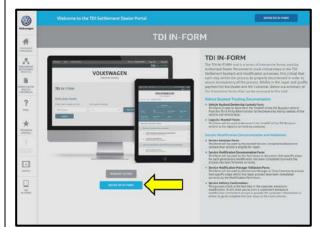
The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.vwhub.com.



Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon request.</u>

#### Proceed to Section G

#### Section G - Recall Repair Documentation Requirements



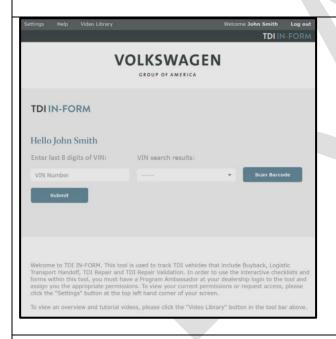
#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.



To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

• Enter the "TDI IN-FORM" tool <arrow>

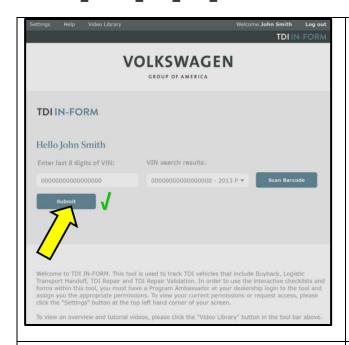


• Enter the VIN for the vehicle that requires documentation.

i TIP

The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

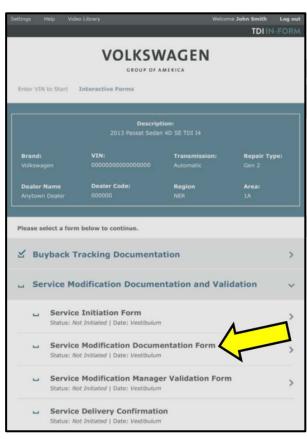
Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.



## i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.



- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.

## U NOTE

#### RISK of Non-payment!

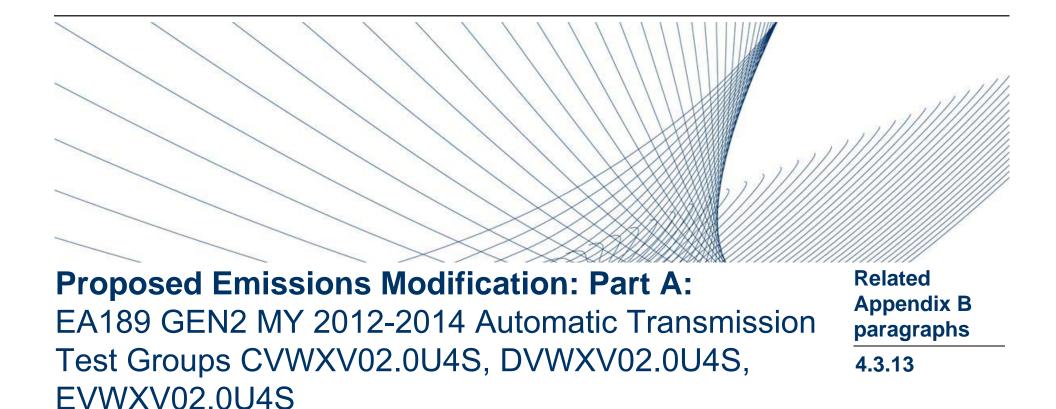
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

## i TIP

Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### **All Work COMPLETE**

# VOLKSWAGEN AKTIENGESELLSCHAFT



Repair Instructions – Update May 10th, 2017





# **Document summary and structure**

Summary of this document	Structure of this document
This documents provides repair instructions and dealer communications for Volkswagen Dealers.	Repair instructions Volkswagen
With the emission modification, the dealers are also instructed to check the DPF for damages and propose a replacement if damaged.	

The content of this document shall be regarded as Confidential Business Information





# Overview over changes made compared to document submitted on December 19th, 2016 Page added compared to submissi

Page added compared to submission on Dec 19th, 2016

Pages	Topic	Changes
7 ff.	Repair Instructions	<ul> <li>Updated repair instructions with lessons learned from the Gen3 Emission Modification</li> <li>Providing the final clean version</li> <li>Providing redline version highlighting the differences compared to version from Dec 19th, 2016</li> </ul>





## **Content**

# **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA189 GEN2 MY 2012-2014 - Test Groups CVWXV02.0U4S, DVWXV02.0U4S, EVWXV02.0U4S

#### Overview of submissions

#### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

## End products and underlying measurements

Repair instructions Volkswagen



CONFIDENTIAL

## Content

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 



**CONFIDENTIAL** 

# Repair Instructions Volkswagen (clean version)

Page and attachment added compared to submission from December 19th, 2016

# Emissions Recall Code: 23U4

## CONFIDENTIAL DRAFT 05/08/2017

Subject

2.0L TDI Engine (GEN 2 – Automatic Transmission)

Emissions Modification – Customer Only (Retail Sold) <u>USA ONLY</u>

**Release Date** 

May XX, 2017

**Affected Vehicles** 

U.S.A. ONLY: 2012-2014 MY Volkswagen Passat 2.0L TDI (Automatic Transmission), Customer (Retail Sold) Only

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system software, install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Completion Label.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

#### **Code Visibility**

On or about May XX, 2017, this campaign code will show open and available for repair on affected vehicles in Elsa.

On or about May XX, 2017, affected vehicles will be identified and open for repair with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com.">www.vw.com</a>.

**Owner Notification** 

Owner notification will take place in May XX, 2017.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification Proof of Completion label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action <u>open on the day of repair</u> to the repair order.

If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.

======================================		
Service Number	23U4	
Damage Code	0099	
Parts Vendor Code	wwo	
Claim Type	Sold vehicle: 7 10	
Vehicle Wash/Loaner	Do not claim wash/loaner under this action	
Criteria I.D.	01	
Criteria I.D.	VI	
Cinteria i.b.	Perform software update, *install a supplemental Vehicle Emissions Control Information label, and TDI Emissions Modification Label.	
Cinteria i.b.	Perform software update, *install a supplemental Vehicle Emissions Control	
Gilleria I.D.	Perform software update, *install a supplemental Vehicle Emissions Control Information label, and TDI Emissions Modification Label.	
Gilleria I.D.	Perform software update, *install a supplemental Vehicle Emissions Control Information label, and TDI Emissions Modification Label.  Labor operation: 2360 25 99 90 T.U.	

## **Campaign Work Procedure**

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

## ! NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

## **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 H	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_2	TDI Emissions Modification – Proof of Completion Label

Labels are sent free of charge. Additional shipments will be released based on the volume of completed repairs claimed through SAGA.

For any additional inquiries contact labelrequest@vw.com

### **Required Tools**



- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



• GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com



This web application is compatible with desktops and laptops running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

## **!**NOTE

#### RISK of Non-payment!

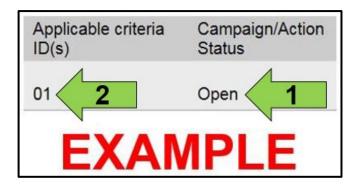
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

## Repair Instruction

#### **Section A - Check for Previous Repair**

i TIP

If Campaign Completion label is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.





## ① NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

Proceed to Section B.

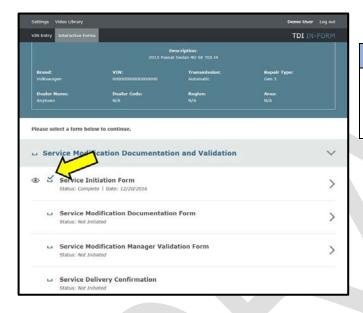


#### Section B - Check for Service Initiation









## U NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

## NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate Service Modification Documentation Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

**Proceed to Section C** 

#### Section C – Check for Pre-existing MIL on conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, obtain GFF diagnostic log, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue work procedure.

# i TIP

- VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.
- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components <u>are</u> found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue work procedure.

**Proceed to Section D** 

#### Section D – Software Version Management

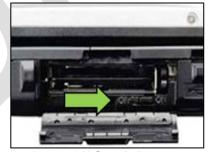
# U NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



**VAS 6150B** (Right side behind WIRELESS door)



**VAS 6150C** (Left side behind SC/EX door)

may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!



To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: Software Version Management (SVM) Operating Instructions.

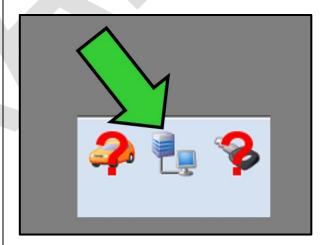
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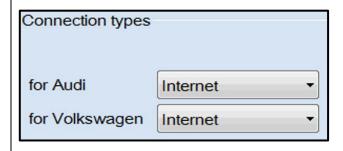
√ Verify your network connection <arrow>
either thru LAN or WIFI by checking the
connection icon (lower right of the home
screen).



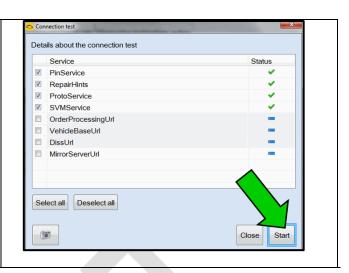
✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

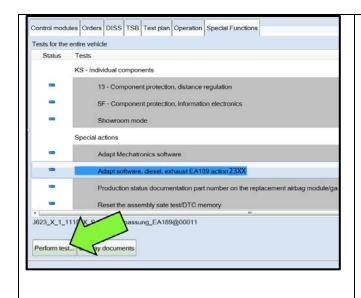


√ Start a connections test <arrow> and verify that all connections pass.



- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.







#### RISK of Scan Tool Damage!

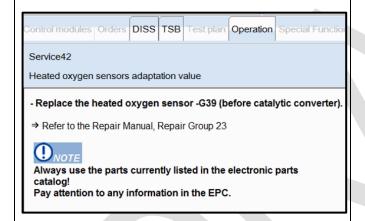
Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- Once the GFF scan is complete, select "Special functions".
- Select the test plan "Adapt software, diesel, exhaust EA189 action 23XX" <as shown>.
- Select "Perform test" <arrow>.



#### RISK of Improper Repair!

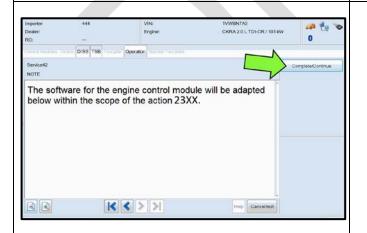
- **DO NOT SELECT** the normal test plan for "Adapting Software".
- ONLY SELECT the test plan "Adapt software, diesel, exhaust EA189 action 23XX" to perform this repair.



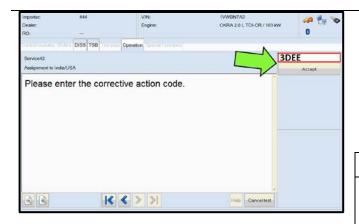
U NOTE

#### **IMPORTANT!**

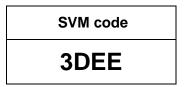
- Prior to the flash process, the test plan checks the condition of the heated oxygen sensor – G39–. If instructed to replace this sensor, refer to campaign code 24CX for repair and claiming instructions.
- DO NOT PROCEED with flashing until sensor is replaced.



Select "Complete/Continue" <arrow>.



 Enter the corrective action code (SVM code) as listed below.

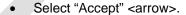




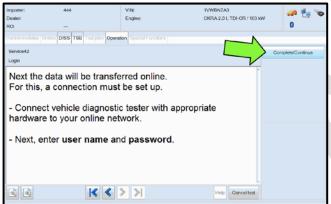
i TIP

#### **KESSY Vehicles!**

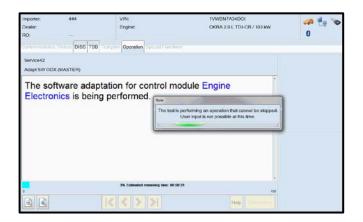
- Due to a weak key battery, it may be necessary to hold the key up to the reader coil during the ignition on/off process of the flash.
- Key(s) should always be left in the vehicle during the flash process.



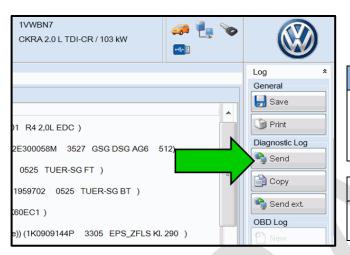
Select "Complete/Continue" <arrow>.



Select "Complete/Continue" <arrow>.



 Observe flash process and follow any on-screen prompts to complete the test plan.



 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

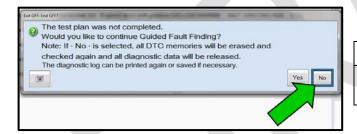


#### RISK of Non-payment!

Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.

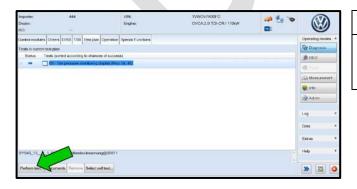


Technicians may find it helpful to also store the log on a USB stick for back-up.





When exiting GFF, it is important to select "No" <arrow>.



# i TIP

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

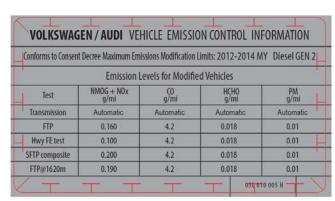
- If TPMS light illuminates, follow test plan "03 Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.

- Release the parking brake.
- Perform test drive.

#### Proceed to Section E



#### Section E – Supplemental Vehicle Emissions Control Information Label



03L 010 005 H



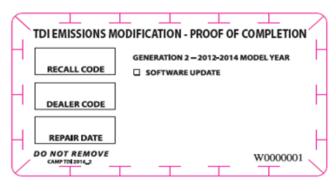
# Install Supplemental Vehicle Emissions Control Information Label



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in location shown.
- Photo documentation of label installed is required.
- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 H, in the location shown <circle>.

Proceed to Section F

# Section F - TDI Emissions Modification - Proof of Completion Label



CAMP TDI 2016\_2

#### **Install Campaign Completion Label**

# i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Completion Label is to be installed.
- Fill out and install the TDI Emissions Modification

   Proof of Completion Label, part number CAMP
   TDI 2016\_2.

# U NOTE

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided).
- Close the hood.

Proceed to Section G (California only).

Proceed to Section H (All States except California).

#### Section G - California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

## i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon</u> request.

#### Proceed to Section H

#### Section H – Recall Repair Documentation Requirements

# Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

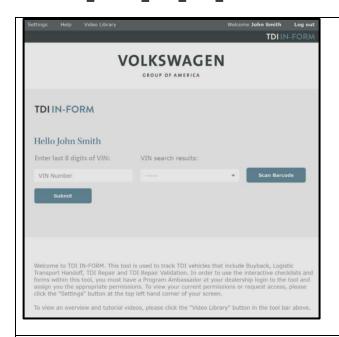


To access the interactive forms go to the TDI Settlement

Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

Enter the "TDI IN-FORM" tool <arrow>



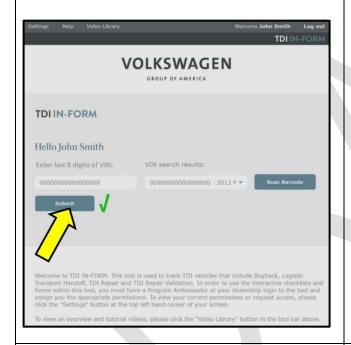


• Enter the VIN for the vehicle that requires documentation.



The VIN can be manually typed in or using an iPad or iPhone running iOS 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.



i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

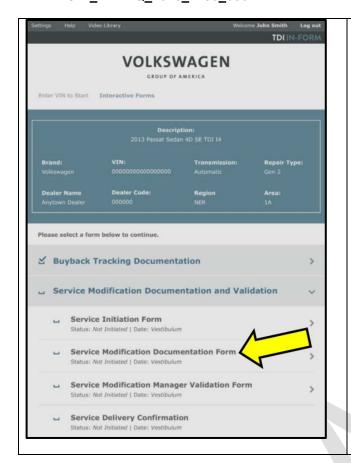
• Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.

U NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



i TIP

Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

**All Work COMPLETE** 





# Repair Instructions Volkswagen (redline version)

Attached document changed compared to submission on December 19th, 2016 Updates highlighted

# Emissions Recall Code: 23U4 CONFIDENTIAL DRA

<del>12/14/2016</del>05/08/2017

Subject

2.0L TDI Engine (GEN 2) - Automatic Transmission)

Emissions Modification – Customer Only (Retail Sold) <u>USA ONLY</u>

**Release Date** 

MONTHMay XX, 20162017

Affected Vehicles

U.S.A. & CANADAONLY: 2012-2014 MY Volkswagen Passat 2.0L TDI (Automatic Transmission), Customer (Retail Sold) Only

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### Corrective Action

Install updated emissions control system—parts and software, install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Completion Label.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

#### **Code Visibility**

On or about MONTHMay XX, 2016, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on www.vwhub.com& OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about Month XX, 20162017, this campaign code will show open and available for repair on affected vehicles in Elsa.

On or about Month May XX, 20162017, affected vehicles will be identified and open for repair with this campaign code in the VIN Lookup tool at www.vw.com.

#### Owner Notification

Owner notification will take place in MONTH May XX, 20162017.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at www.vwhub.com.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed before delivery to consumers.

Labels can be ordered at no cost via the Compliance Label Ordering portal at www.vwhub.com.

Fill out and affix the appropriate TDI Emissions Modification Proof of Completion label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.



#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order.

If customer refused campaign work:

- ✓—<u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.
- Canada dealers: Fax repair order to Warranty at (905) 428-4811.

✓

<u>-</u>		
Service Number	23U4	
Damage Code	0099	
Parts Vendor Code	wwo	
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90	
Vehicle Wash/Loaner	Do not claim wash/loaner under this action	
Criteria I.D.	01	
	Perform software update, *install a supplemental Vehicle Emissions Control Information label, and TDI Emissions Modification Label.  Labor operation: 2360 25 99 90 T.U.	
	*Labels are sent free of charge. They cannot be charged to this campaign.  At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.	

# **Campaign Work Procedure**

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

# U NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

# **Required Parts**

Quantity	Part Number	Part Description
1	03L 010 005 H	Vehicle Emissions Control Information Label
1	CAMP TDI 2016_2	TDI Emissions Modification – Proof of Completion Label

Labels are sent free of charge. Additional shipments will be released based on the volume of completed repairs claimed through SAGA.

For any additional inquiries contact labelrequest@vw.com

# **Required Tools**



- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



• GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- Insert Link Here.tdi-inform.track360.com



This web application is compatible with desktops and laptops running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

# **!**NOTE

#### RISK of Non-payment!

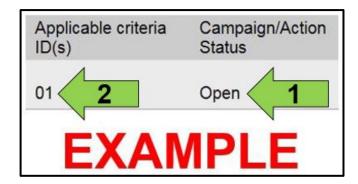
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

# Repair Instruction

#### **Section A - Check for Previous Repair**

i TIP

If Campaign Completion label is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.





① NOTE

RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

Proceed to Section B.

### Section B - Check for Pre-existing MIL on conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, obtain GFF diagnostic log, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue work procedure.

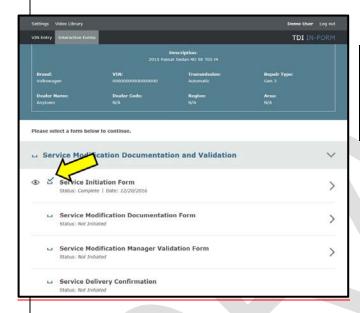
- Check for vehicle modifications from origina oquipment.
  - If vehicle modifications from original equipment are found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are not found, continue work procedure.

Proceed to Section C

#### **Section B – Check for Service Initiation**







# U NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

# **!** NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate Service Modification Documentation Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

Proceed to Section C

Section C – Software Version Management Check for Pre-existing MIL on conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - o If MIL is illuminated, STOP, obtain GFF diagnostic log, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - o If MIL is not illuminated, continue work procedure.

# i TIP

- VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.
- Check for vehicle modifications from original equipment.
  - o If vehicle modifications from original equipment related to emissions components are found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original
     equipment related to emissions components
     are not found, continue work procedure.

**Proceed to Section D** 



#### ection D – Software Version Management

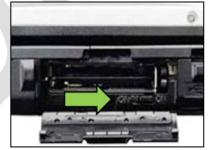
NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



**VAS 6150B** (Right side behind WIRELESS door)



**VAS 6150C** (Left side behind SC/EX door)

may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!



To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: Software Version Management (SVM) Operating Instructions.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

Things to check before starting Software Version Management (SVM):

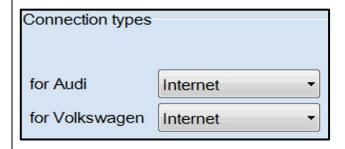
√ Verify your network connection <arrow>
either thru LAN or WIFI by checking the
connection icon (lower right of the home
screen).



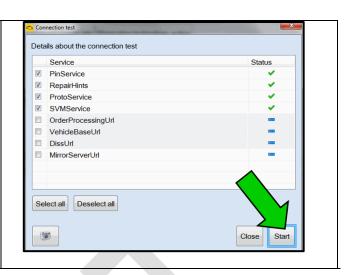
✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

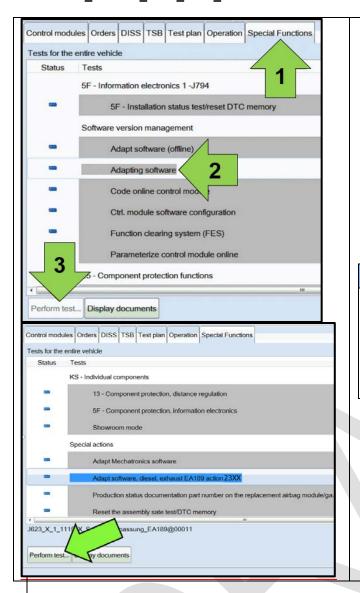


✓ Start a connections test <arrow> and verify that all connections pass.



- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.





# () NOTE

#### RISK of Scan Tool Damage!

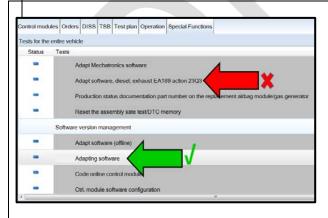
Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- Once the GFF scan is complete, select "Special functions" <a href="arrow1"><a href="arro
- Select the test plan "Adapt software" <arrow 2>, then select, diesel, exhaust EA189 action 23XX" <as shown>.
- Select "Perform test" <arrow-3>.

# **NOTE**

#### RISK of Improper Repair!

- DO NOT SELECT the normal test plan for "Adapting Software".
- ONLY SELECT the test plan "Adapt software, diesel, exhaust EA189 action 23XX" to perform this repair.

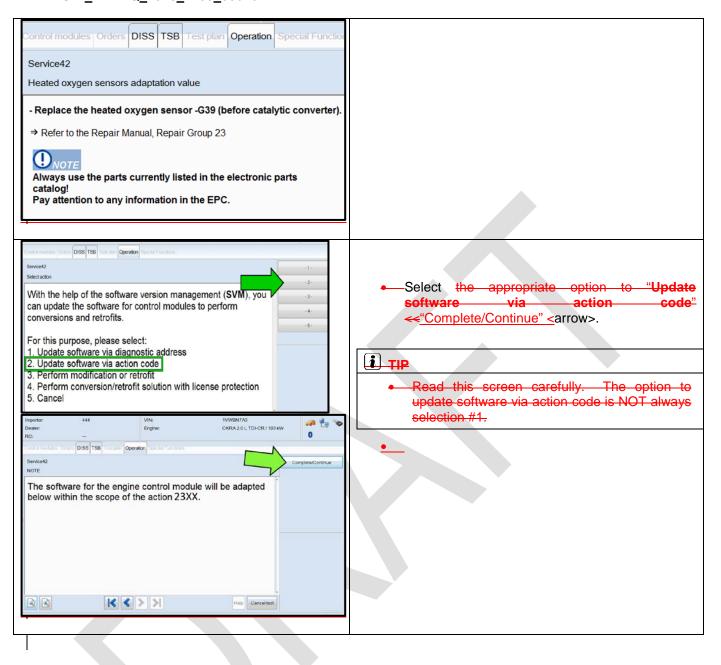


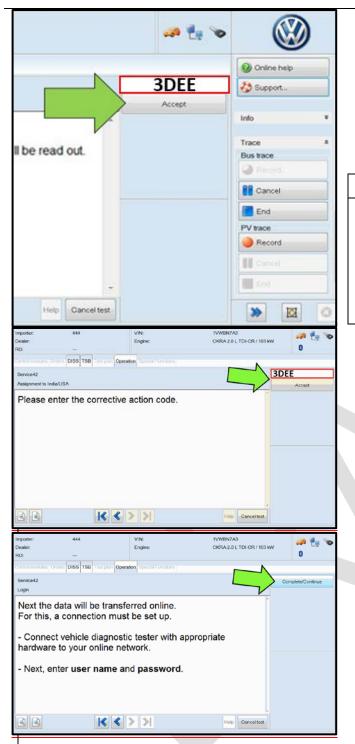
# U NOTE

#### RISK of Improper Repair!

#### **DO NOT SELECT IMPORTANT!**

- Prior to the test plan for "Adapt software, diesel, exhaust EA189 action 23Q3" <red arrow>.
  - ONLY SELECTflash process, the test plan "Adapting software" <green arrow> to performchecks the condition of the heated oxygen sensor -G39-. If instructed to replace this sensor, refer to campaign code 24CX for repair- and claiming instructions.
  - **DO NOT PROCEED** with flashing until sensor is replaced.





• Enter the corrective action code (SVM code) as listed below.

SVM code

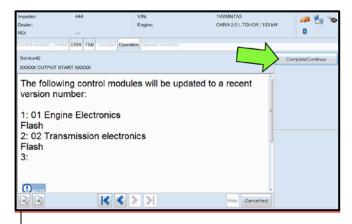
3DEE

i TIP

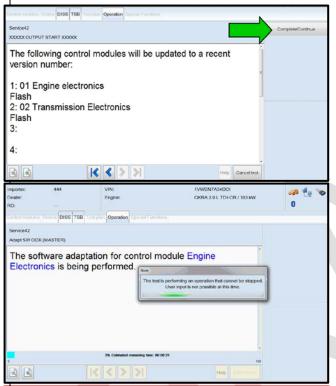
#### **KESSY Vehicles!**

- Due to a weak key battery, it may be necessary to hold the key up to the reader coil during the ignition on/off process of the flash.
- Key(s) should always be left in the vehicle during the flash process.
- Select "Accept" <arrow>.

Select "Complete/Continue" <arrow>.



• Select "Complete/Continue" <arrow>.



Select "Complete/Continue" <arrow> to begin the software update

- Observe flash process-
  - If the response indicates that the control modules are current, Flash Process is Complete, proceed to Section E.
  - If the response indicates new software versions are available <as shown>, Select "Complete/Continue" and follow theany on-screen prompts to complete the test plan.



- WhenAt the SVM update is complete a confirmation message is displayed <as shown>.
- end of the diagnostic session, Select "Complete/ContinueSend" <arrow>-> and follow the prompt for sending the log on-line.

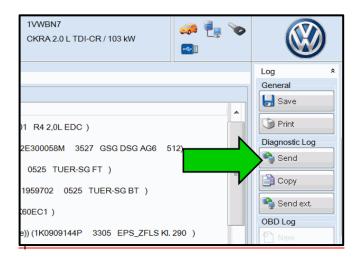


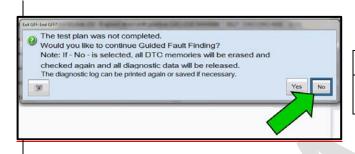
#### RISK of Non-payment!

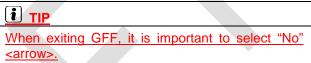
<u>Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.</u>



Technicians may find it helpful to also store the log on a USB stick for back-up.





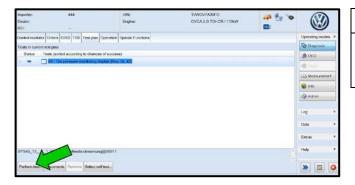




 Switch the ignition off, then select "Complete/Continue" <arrow>.



 The green check mark indicates the test plan was successfully carried out.



# i TIP

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

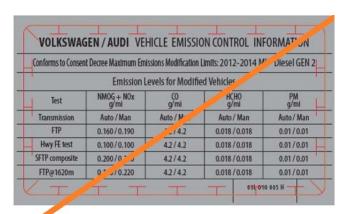
- If TPMS light illuminates, follow test plan "03 Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform test drive.

# **NOTE**

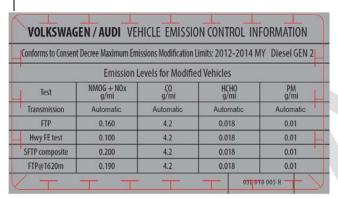
<u>DO NOT drive</u> vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

Proceed to Section DE

### **\$ection DE** – Supplemental Vehicle Emissions Control Information Label



03L 010 005 H



03L 010 005 H



# Install Supplemental Vehicle Emissions Control Information Label

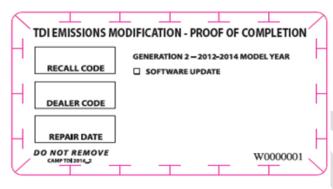


- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations location shown.
- Photo documentation of label installed is required.

- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 H, in the location shown <circle>.

Proceed to Section EF

# \$ection <u>EF</u> – TDI Emissions Modification – Proof of Completion Label



CAMP TDI 2016 2

#### **Install Campaign Completion Label**

# i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the CampaignTDI Emissions Modification – Proof of Completion Label is to be installed.
- Fill out and install the TDI CampaignEmissions

  Modification Proof of Completion Label, part number CAMP TDI 2016\_2.

# • NOTE

<u>Place the label next to the Vehicle Emission Control Information Label.</u>

- Apply clear overlay (provided).
- Close the hood.

Proceed to Section F (California only).

Proceed to Section G (California only).

Proceed to Section H (All States except California).

## **\$ection FG** – California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.vwhub.com.



Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon</u> request.

Proceed to Section GH

# **\$ection GH** – Recall Repair Documentation Requirements

#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- <u>Dealer Representative/</u>Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the



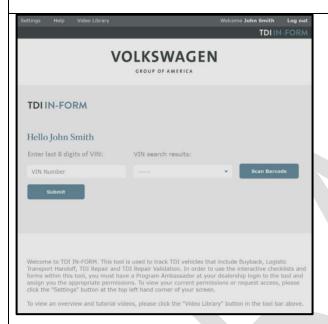
SAGA system.

# i TIP

To access the interactive forms go to the TDI Settlement

Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

Enter the "TDI IN-FORM" tool <arrow>

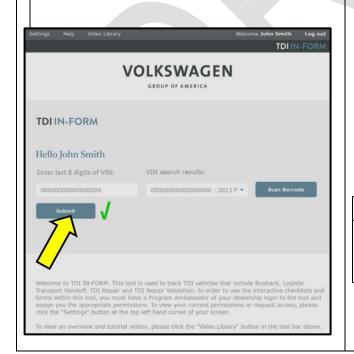


• Enter the VIN for the vehicle that requires documentation.

# i TIP

The VIN can be manually typed in or using an iPad or iPhone running iOS 9+, the camera can be used to scan the VIN Barcode.

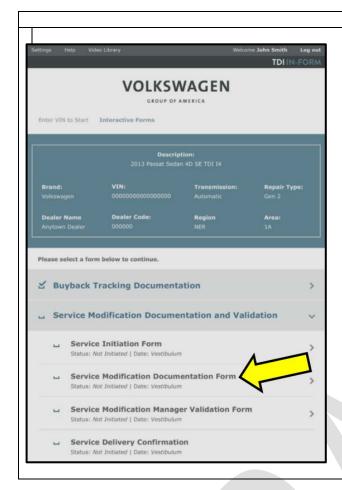
Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.



# i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

Validate the VIN is correct for the vehicle, then



click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.

# ① NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

# i TIP

Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### **All Work COMPLETE**

# VOLKSWAGEN AKTIENGESELLSCHAFT



**Proposed Emissions Modification: Part A:** 

EA189 GEN1 MY 2009-2014 Automatic and Manual Transmission Test Groups 9VWXV02.035N, 9VWXV02.0U5N, AVWXV02.0U5N, BVWXV02.0U5N, CVWXV02.0U5N, DVWXV02.0U5N, EVWXV02.0U5N

Repair Instructions

January 23rd, 2017

**Appendix B** paragraphs

4.3.13





# **Document summary and structure**

# **Summary of this document**

This documents provides repair instructions and dealer communications for Volkswagen and Audi Dealers.

Due to technical differences between model years 2009 and 2010 – 2014, the scope of emissions modification mentioned in the repair instruction for model years 2009 is larger then the repair instructions for model years 2010 – 2014

### Structure of this document

- ▶ Repair instructions Volkswagen
- ▶ Repair instructions Audi

The content of this document shall be regarded as Confidential Business Information



# **Content**

# **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen

Repair Instructions Audi





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA189 Gen1 MY 2009 - 2014 - 9VWXV02.035N, 9VWXV02.0U5N, AVWXV02.0U5N, BVWXV02.0U5N, CVWXV02.0U5N, DVWXV02.0U5N, EVWXV02.0U5N

#### **Overview of submissions**

#### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

# End products and underlying measurements

- Repair instructions Volkswagen
- Repair instructions Audi





# **Content**

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 

Repair Instructions Audi

# **Emissions Recall**

**Code: 23U3** 

# **CONFIDENTIAL DRAFT 01/23/2017**

Subject

2.0L TDI Engine (GEN 1) Emissions Control Software - TDI Vehicles <u>USA ONLY</u>

Release Date
Affected Vehicles

MONTH XX, 2016

U.S.A.: 2009-2014 MY Volkswagen 2.0L TDI (Gen 1)

Country	Model Year	Vehicle Carline
USA	2009-2014	Jetta
		Jetta SportWagen
		Beetle
		Beetle Convertible
		Golf

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system parts and software, install a TDI Emissions Modification – Proof of Partial Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

#### **Code Visibility**

On or about Month XX, 2017, this campaign code will show open on affected vehicles in Elsa. On or about Month XX, 2017, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

#### **Owner Notification**

Owner notification will take place in MONTH 2016.

# Alternate Transportation

As a reminder, customers are eligible to receive alternate transportation for repairs exceeding 3 hours.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Partial Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Labels can be ordered via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action open on the day of repair to the repair order.

If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit request via WISE under the Campaigns/Update/Recall Closure option.				
Service Number	23U3			
Damage Code	0099			
Parts Vendor Code	wwo			
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90			
Vehicle Wash	Do not claim wash under	this action.		
Alternate Transportation	As a reminder, customers are eligible to receive alternate transportation for repairs exceeding 3 hours. Please refer to the Loaner Vehicle information contained in the Warranty Policy Manual.			
Criteria I.D.	01 – MY 2009 ONLY			
	*Install <u>Base Kit I and Base Kit II components</u> , install glow plug control module, perform software update, and install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Labor operation: 2360 22 99 570 T.U.			
	Part number	Description		Quantity
	1K0.298.101.A	Base Kit I		1
	1K0.298.101.X	Base Kit II		1
	03L.907.281	Glow Plug Control Module		1
	*Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.			
Criteria I.D.	02 – MY 2010-2014			
	*Install <u>Base Kit I components</u> , perform software update, and install a supplemental Vehicl Emissions Control Information label and TDI Emissions Modification Label.  Except Beetle Convertible – Labor operation: 2360 23 99 270 T.U.  Beetle Convertible ONLY – Labor operation: 2360 24 99 290 T.U.			emental Vehicle
	Part number Description Quantity		Quantity	
	1K0.298.101.A	Base Kit I		1
	*Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.  ****OR****  *If necessary determined by DPF Upper O2 sensor test plan results, install Base Kit I components, DPF O2 Sensor, perform software update, and install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Except Beetle Convertible – Labor operation: 2360 25 99 280 T.U.			
	Beetle Convertible ONLY – Labor operation: 2360 26 99 300 T.U.			
	Part number	Description		Quantity
	1K0.298.101.A	Base Kit I		1
	03L.906.262.B	DPF Upper O2 sensor		-

<sup>\*</sup>Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

# **Campaign Work Procedure**



Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

### **Required Parts**

Quantity	Part Number	Part Description		
1	1K0.298.101.A	Base Kit I		
1 (if necessary)	03L.906.262.B	Upper O2 sensor		
1	1K0.298.101.X	Base Kit II (MY 2009 only)		
1	03L.907.281	Glow Plug Control Module (MY 2009 only)		
1	03L 010 005 G	Vehicle Emissions Control Information Label		
1	Camp TDI 2016 1A	TDI Emissions Modification Label (MY 2009)		
OR				
1	Camp TDI 2016 1B	TDI Emissions Modification Label (MY 2010-2014)		

Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

# **Required Tools**



- VAS6150C Diagnostic Tester (or equivalent)
- VAS5054A Remote Diagnosis Head (or equivalent)



• GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com



This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.



#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Socket 22mm –T10491–



• Torque wrench -V.A.G 1331- (or equivalent)



Torque wrench -V.A.G 1332- (or equivalent)



Locating pins -T10096-



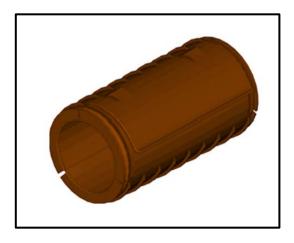
• Ratchet wrench -T10384- (or equivalent)



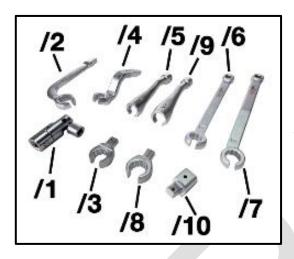
Hose clamp pliers -VAS 6362- (or equivalent)



• Engine and gearbox jack -VAS 6931-



• Transportation lock for flexible joint -T10404-



Tool set -T10395 A-



 -3346- Note: 2 Spindles 3346/2 with nuts 3346/3 from assembly tool -3346-



VAS6254 – Chain Pipe Cutter (or equivalent)

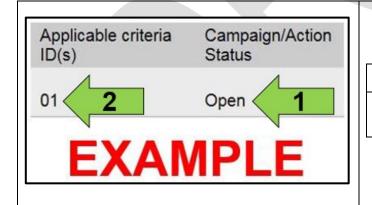
#### **Emissions Modification Instructions**

#### Section A - Check for Previous Emissions Modification

i TIP

If the correct TDI Emissions Modification Label is present, no further work is required.

- MY 2009 vehicles: CAMP TDI 2016 1A
- MY 2010-2014 vehicles: CAMP TDI 2016\_1B

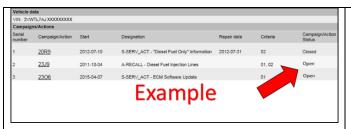


• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

# i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.



- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

Proceed to Section B.

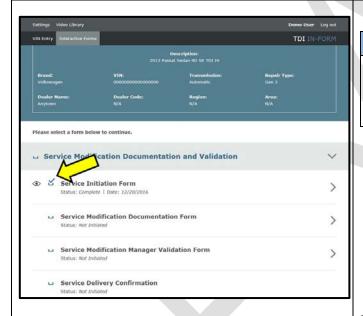
#### Section B - Check for Service Initiation



# NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



### U NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate
     Service Modification Documentation
     Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

Continue to Section C

#### Section C – Check for Pre-existing MIL on conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue work procedure.

# i TIP

 VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.

- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components <u>are</u> found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue work procedure.

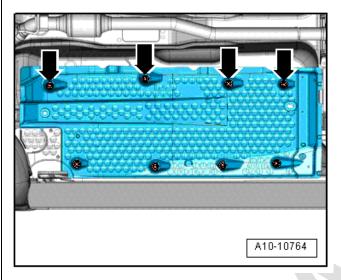
**Proceed to Section D** 

# Section D – Repair Procedure (Criteria 02 – MY 2010-2014 ONLY)

# i TIP

Section D addresses vehicles built with a <u>two-piece</u> Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in MY 2010. For vehicles built with a one-piece system, the DPF must be replaced as there is no connection on the original components.

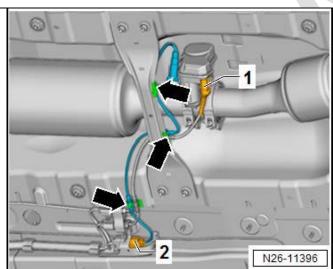
Begin with Section E for <u>one-piece</u> DPF/Lean NOx trap systems.



- Open hood.
- · Raise vehicle on hoist.
- Unscrew nuts -arrows- and pull underbody cladding down slightly.

# i TIP

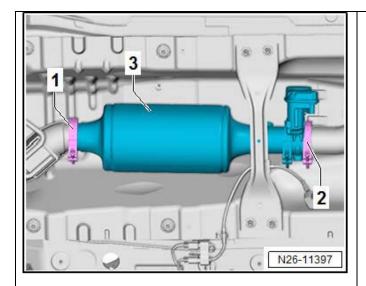
A wedge could be placed between vehicle body and cladding to allow more work space.



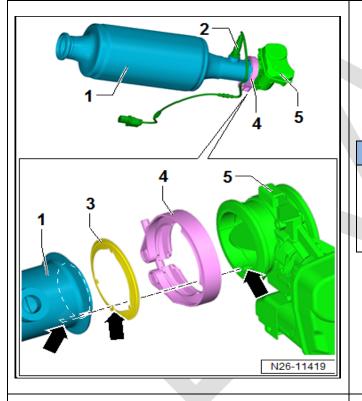
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- -2-. Remove plug from retainer.
- Open fasteners for heat shield and pull connector
   -1- off exhaust door control unit -J883- and thread wiring out of retainers -arrows-.

# i TIP

Take a photo of this area now for help with harness routing during reinstallation later.



 Loosen clamps -1- and -2- and remove NOx storage catalytic converter together with exhaust door control unit -J883-.

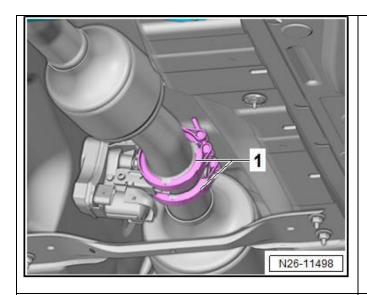


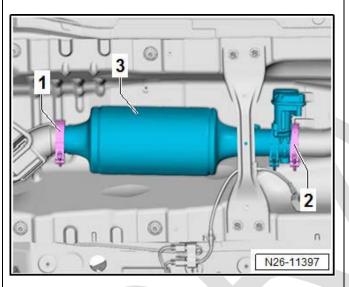
- Screw new oxygen sensor after catalytic converter -G130- -2- into new NOx storage catalytic converter -1- and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- -5- with new seal -3- on NOx storage catalytic converter -1-. Note notches -arrows-.

# U NOTE

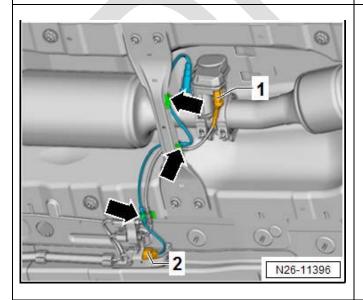
Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

- Position clamp 1K0 253 725 B -4- and tighten to 7 Nm
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps -1- so that they will not collide with underbody.

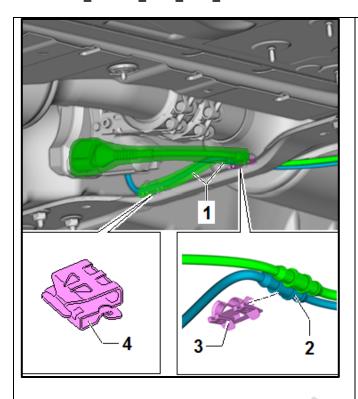




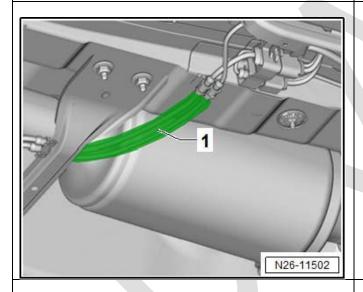
- Set clamp 1K0 253 725 B -2- in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 -1- in place and engage. Then tighten to 7 Nm.



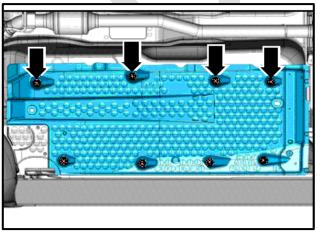
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- -2- and attach to bracket.
- Push connector -1- onto exhaust door control unit. Secure lines in retainers -arrows-.



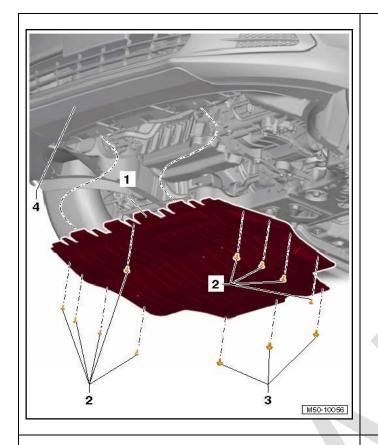
- Wrap new heat insulation mats -1- around wiring and close fasteners.
- Place wires -2- in clips -3- and -4-.



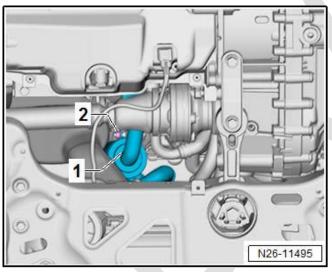
 Wrap new heat insulation mats -1- around wiring and close fasteners.



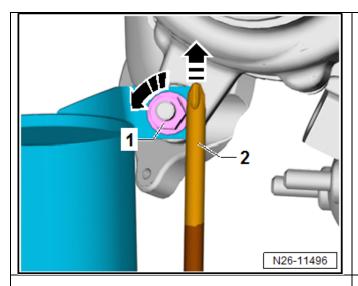
 Press underbody cladding upward and tighten nuts –arrows to 2 Nm.



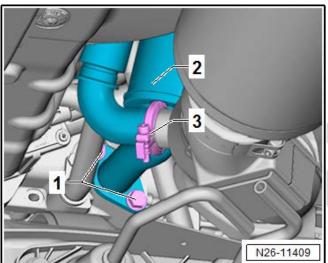
- Remove bolts -2- and -3-.
- Pull noise insulation -1- back, out of front bumper cover -4-.



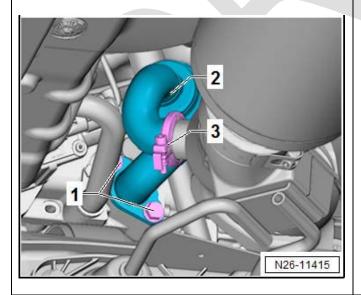
- Remove nut -2- from exhaust gas recirculation filter -1- from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



 Apply screwdriver -2- on side of nut -1- and unscrew nut while simultaneously pressing up on nut.

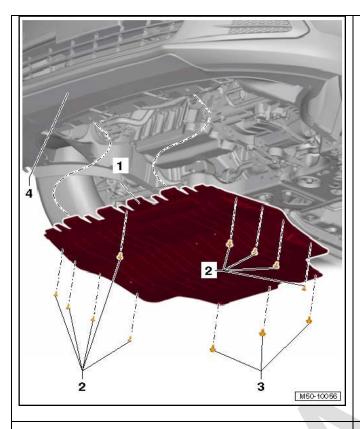


- Open clamp -3- and remove it.
- Remove bolts -1- and remove exhaust gas recirculation filter -2-.



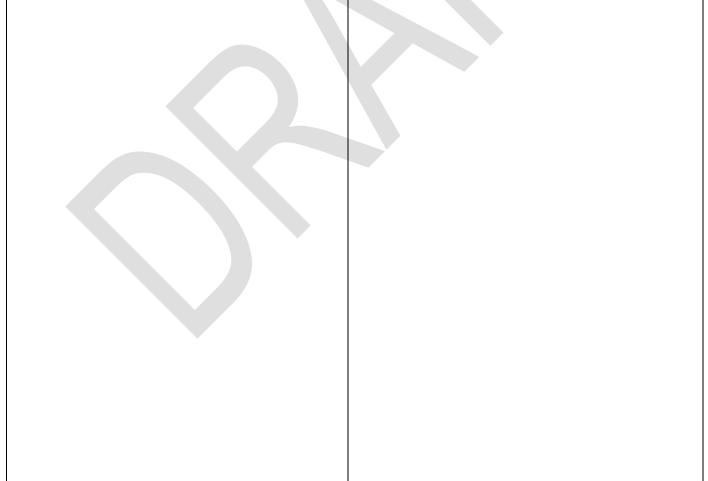
- Set new exhaust gas recirculation filter -2- with new seals in place, screw in bolts -1- and tighten to 9 Nm.
- Position clamp -3- and tighten to 3.5 Nm.

Description	Part number	
EGR Filter	1K0.253.120.B	
Seal	03G.131.547.H	
Seal	1K0.253.115.AG	
Clamp	1K0.253.725.F	



- Push noise insulation -1- forward into front bumper cover -4-.
- Screw in bolts -2- and new bolts -3- and tighten as follows:
  - o Bolt -2-: 2 Nm
  - Bolt -3-: 6 Nm (renew)

**Continue to Section F** 



### Section E – Repair Procedure (Criteria 01 – MY 2009 ONLY)

# i TIP

Section E addresses vehicles built with a <u>one-piece</u> Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in MY 2009 and ended with Start of Production (SOP) MY 2010. For vehicles built with a one-piece system, the DPF must be replaced as there is no connection on the original components.

Begin with Section D for <u>two-piece</u> DPF/Lean NOX trap systems.

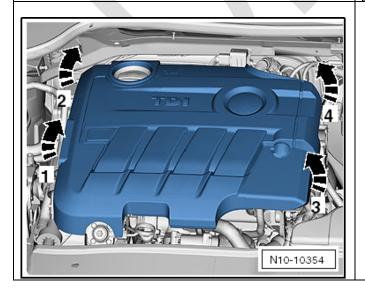
# **WARNING**

When doing any repair work, especially in the engine compartment, pay attention to the following due to the cramped conditions:

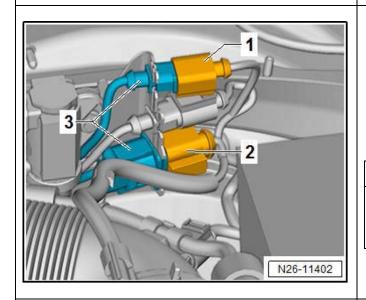
- Route all sorts of lines and electrical wiring so that they are in their original positions.
- E.g. for fuel, hydraulics, activated charcoal filter system, coolant and refrigerant, brake fluid and vacuum.
- Ensure that there is sufficient clearance to all moving or hot components.

# **A** CAUTION

The bracket for the engine cover on the cylinder head cover may break off if improperly removed. Always remove the engine cover panel according to the following instructions.



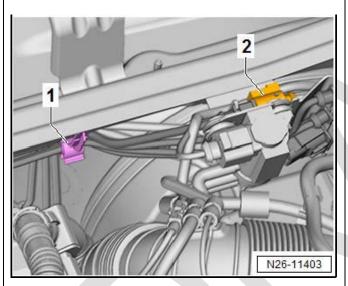
• Pull engine cover up out of fastening elements near –arrows– in order shown. To do this, grip as far as possible beneath engine cover.



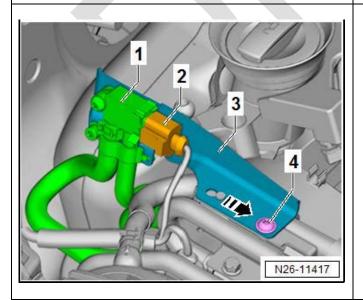
- Disconnect »orange« connector for exhaust gas temperature sender 2 -G448- -1- and »black« connector for oxygen sensor -G39- -2- on plenum chamber bulkhead.
- Remove wiring -3- from retainer and move clear.

# i TIP

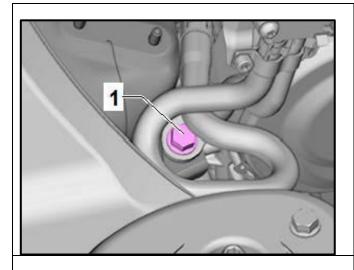
Take a photo of this area now for help with harness routing during reinstallation later.



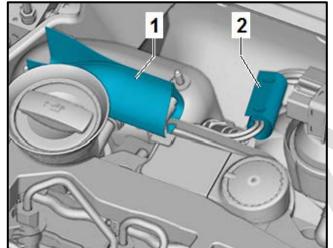
- Disconnect »brown« connector for exhaust gas temperature sender 3 -G495- -2- (secured behind bracket).
- Thread lines out of brackets -1- on plenum chamber bulkhead and on turbocharger.



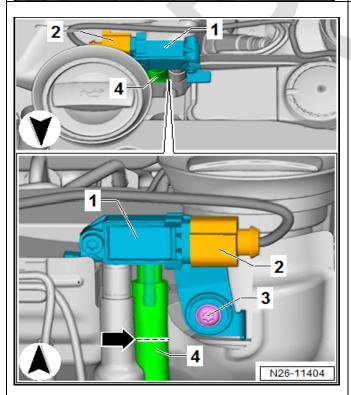
- Pull connector -2- off differential pressure sensor -G505- -1-.
- Remove securing bolt -4-, remove bracket -3with differential pressure sender -G505- -1- in direction of arrow- and move aside. Control lines remain connected.



• Unscrew securing bolt -1- on upper bracket for particulate filter.



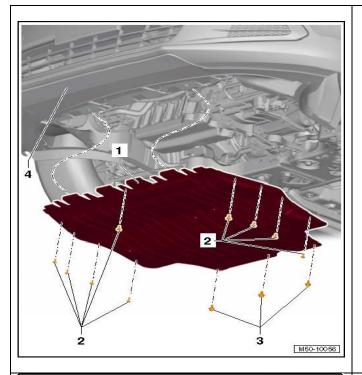
- Open fasteners on heat insulation -1- for exhaust pressure sensor 1 -G450-.
- Open heat insulation -2- for wiring and remove.



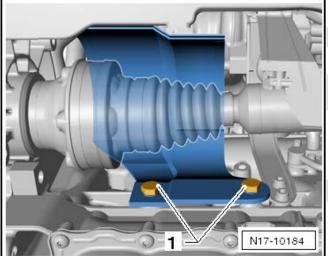
- Pull connector -2- off exhaust pressure sensor 1 -G450- and remove securing bolt -3-.
- Cut control line -4- to exhaust gas recirculation cooler with an appropriate tool (e.g. utility knife) at the line -arrow- indicated in figure.
- Move bracket with exhaust pressure sensor 1 -G450- aside (control line to particulate filter remains connected).



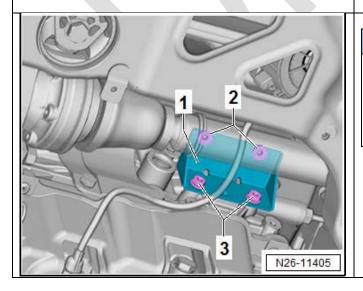
Bundle the loose harnesses with tape or similar means. Place harnesses on top of the DPF to prevent them from catching on vehicle while removing the DPF.



- Remove bolts -2- and -3-.
- Pull noise insulation -1- back, out of front bumper cover -4-.



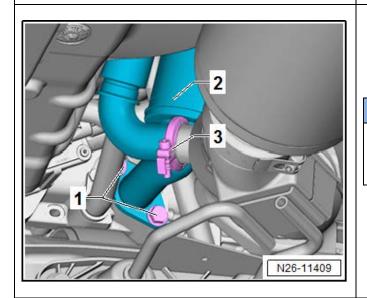
 Unscrew bolts -1- and remove heat shield for right drive shaft.



# U NOTE

Unscrew securing nuts above bracket -2- with ratchet wrench -T10384-. In some cases, the bracket cannot be removed until the particulate filter has been detached.

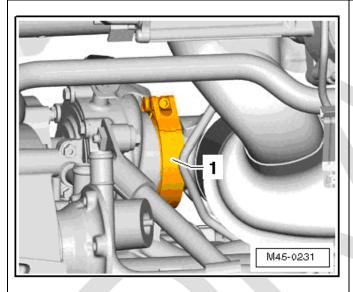
 Remove nuts -2- and -3- and remove lower bracket for particulate filter -1-.



• Open clamp -3- and remove it.

# U NOTE

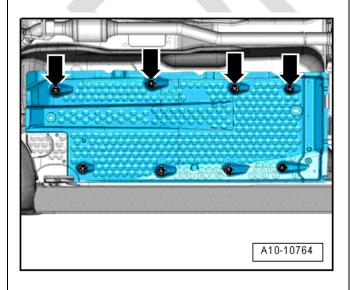
The exhaust gas recirculation filter -2- is removed after the particulate filter has been removed.



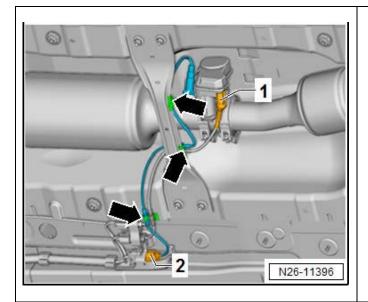
# ① NOTE

Position of clamp -1- may vary. If necessary, use 5 mm bit with ball head (e.g. T10058).

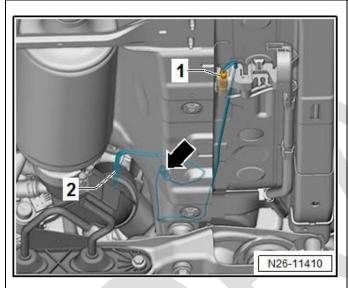
• Loosen and remove clamp -1- connecting turbocharger and particulate filter.



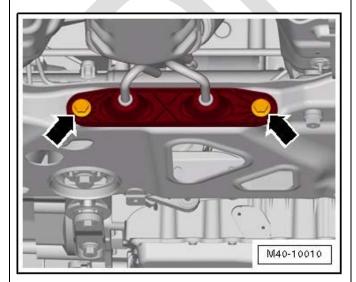
 Unscrew nuts -arrows- and pull underbody cladding on right down slightly.



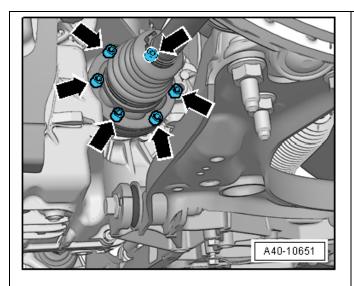
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- -2-.
   Remove plug from retainer.
- Open fasteners on heat shield, pull connector -1off exhaust door control unit -J883- and thread wiring out of retainers -arrows-.



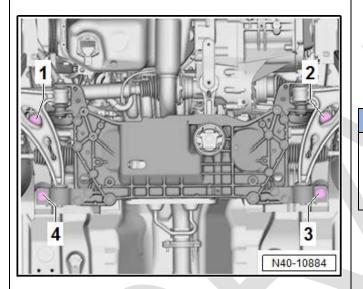
 Disconnect connector -1-. Take electrical wire from exhaust gas temperature sender 4 -G648--2- on heat shield out of clip -arrow- and bracket and move to side.



• Remove bolts -arrows- from exhaust system bracket on subframe.



• Remove bolts -arrows- and remove right drive shaft from transmission. Rest drive shaft on front axle.



 To fix the position of the subframe, the locating pins -T10096- must be screwed one at a time into positions -1-, -2-, -3- and -4-.

# U NOTE

The locating pins -T10096- may be tightened only to max. 20 Nm, or the threads of the locating pins will be damaged.

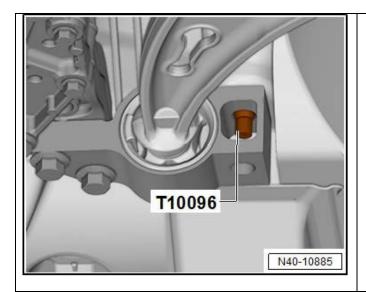


# U NOTE

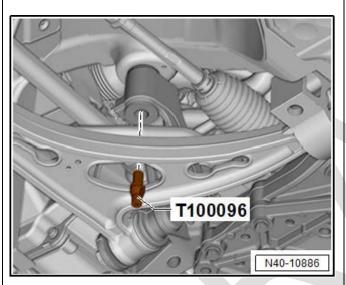
#### Severe Damage RISK!

When installing the subframe locating pins -T100096-, it is possible to damage the subframe mount threads due to the normal variance in alignment. Damage to the subframe mount threads would be an extensive, body-shop repair that is not covered under this action.

Only use hand tools for this process. If the locating pins bind, they should be backed out, threads cleaned and restarted.



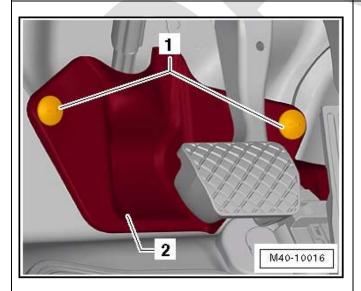
 One at a time, remove securing bolts on mounting bracket and replace them with locating pins -T10096- on both sides. Tighten locating pins to 20 Nm.



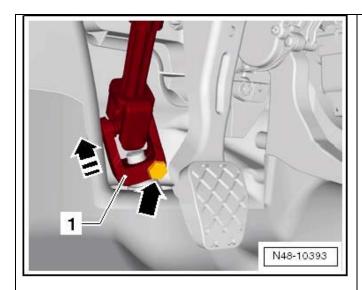
 One at a time, replace bolts in brackets with locating pins -T10096-. Tighten locating pins to 20 Nm.

i TIP

The position of the front axle is now fixed.



- Turn steering wheel to straight-ahead position and remove ignition key to engage steering wheel lock.
- If the vehicle has the keyless locking and starting system "Keyless Access", switch off ignition and open driver door to engage steering wheel lock.
- Remove bolts -1- and remove footwell trim -2-.



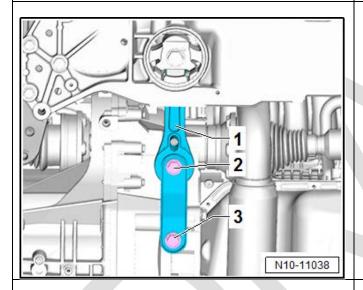
# **A** CAUTION

Never perform the following actions if the U-joint has been separated from the electromechanical steering mechanism:

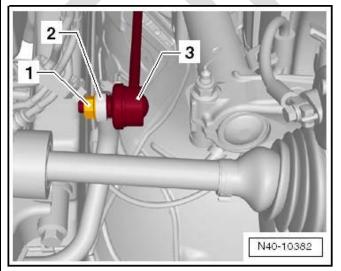
- Switching ignition on
- Turning steering mechanism
- Turning steering column

These points must always be complied with because these actions can cause irreparable damage to the clock spring or other items that is not covered under this action.

 Remove bolt -arrow- from U-joint -1- and pull off U-joint in -direction of arrow-.



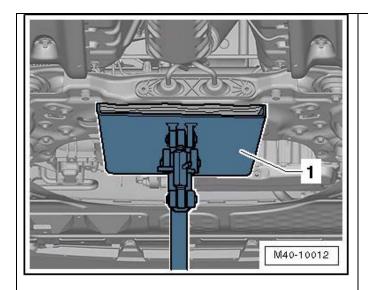
• Removed bolts -2- and -3- for pendulum support -1- from gearbox.



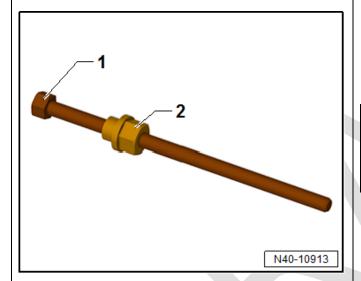
- Unscrew hexagon nut -1- on left and right from coupling rod -3-.
- Pull coupling rod -3- on the left and right out of anti-roll bar -2-.

# i TIP

Apply penetrating oil to the hexagon -1- nut to aid in removal.



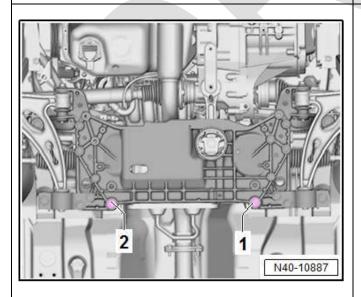
 Place engine and gearbox jack -VAS 6931- -1under subframe.



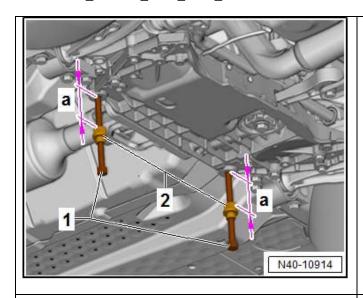
 Screw nuts 3346/3 -2- by hand as shown onto spindles 3346/2 -1- to end of thread as shown.

# U NOTE

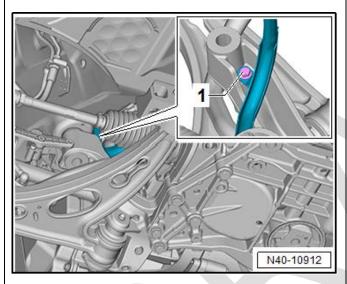
For clarity of illustration, the following steps are shown without the engine and gearbox jack.



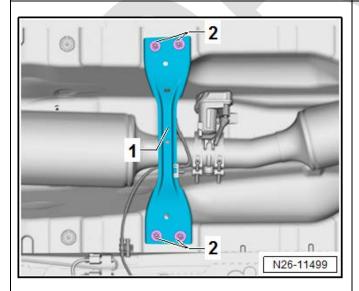
• Unscrew bolts -1- and -2-.



• Screw in spindles 3346/2 by hand until distance - a- equals 90 mm.



 Lower subframe about 5cm and remove bolt -1on the wire harness bracket for steering gear.

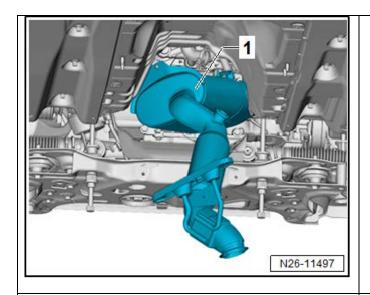


• Lower the engine and gearbox jack -VAS 6931-completely and remove it from work area.

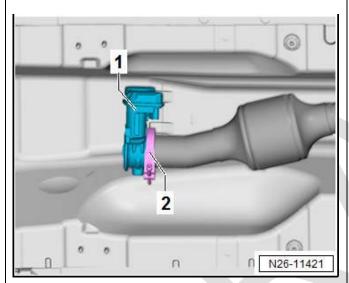
# i TIP

The subframe is now supported by spindles 3346/2.

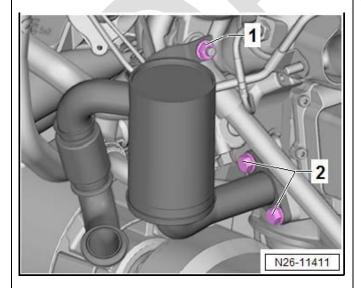
- Remove hexagon nuts -2- from front tunnel cross-piece -1- and remove tunnel cross-piece.
- Remove securing clamp between NOx storage catalytic converter and exhaust door control unit -J883-.



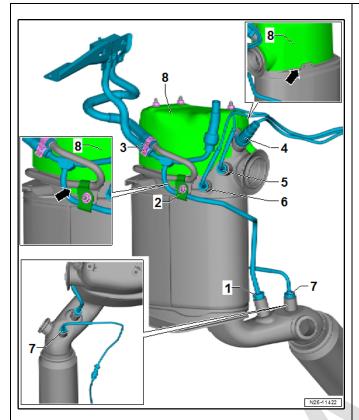
 With the help of a second mechanic, remove particulate filter. Do this by »turning « particulate filter -1- out of center tunnel. Note electrical wiring and components when doing this.



 Open clamp -2- and remove exhaust door control unit -1-.



 Remove nut -1- and bolts -2-, and remove exhaust gas recirculation filter.



### i TIP

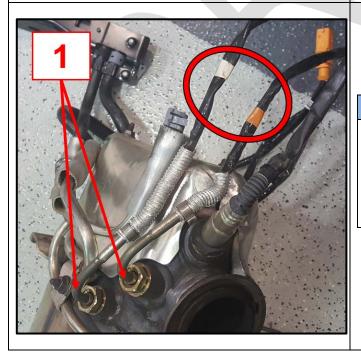
Before the installation of the newly assembled filter, place the new and old assembly side-byside for comparison.

## Assemble particulate filter as follows before installation:

### A CAUTION

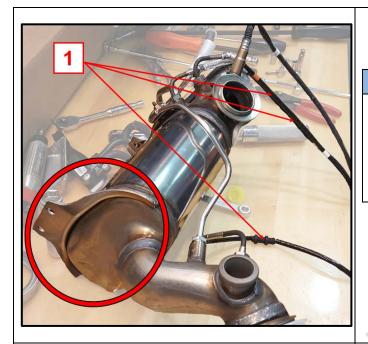
If transportation lock was not included among items supplied, ensure that flexible joint is fixed with transportation lock -T10404- to prevent damage to the flex pipe.

- 1 Position control line and screw in union nut hand-tight.
- 2 Position retainer for control line, screw in bolt, tighten to 9 Nm and then tighten union nut to 45 Nm.
- 3 Attach connecting hoses from differential pressure sender -G505- as shown and secure with spring clamps.
- 4 Screw in oxygen sensor -G39- and tighten to 52 Nm.
- 5 Screw in exhaust gas temperature sender 2 -G448- (connector color: orange, angled 110°) and tighten to 45 Nm.
- 6 Screw in exhaust gas temperature sender 3 -G495- (connector color: brown) and tighten to 45 Nm.
- 7 Screw in exhaust gas temperature sender 4 -G648- (connector color: beige, angled 90°) and tighten to 45 Nm.
- 8 Set heat shield in position and check that it is properly seated -arrows-. Tighten nuts to 10 Nm.



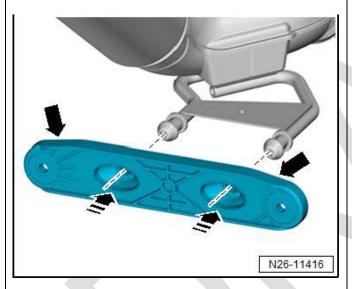
## **U** NOTE

When installing the exhaust gas temperature senders to the DPF, it is possible to install the sensors <1> in the wrong locations. Sensors installed in the wrong positions will not function properly. Pay attention to the sensor color coding <circle> when installing sensors into the DPF.

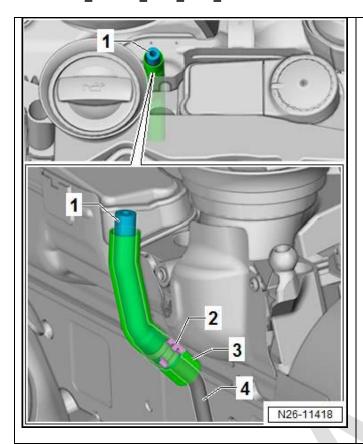


## ① NOTE

When "bench-installing" the exhaust gas temperature senders to the DPF, the edge of the lower bracket <circle> can damage the sensor wires <1> if they are allowed to get underneath the bracket while positioning the DPF. Pay special attention to the sensor wiring to prevent damage to these sensors.

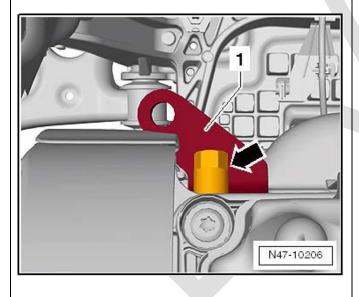


 Press bracket in -direction of arrow- onto pins of particulate filter. The bracket edge which tapers towards the ends -arrows- must face upwards.



## Renewing hose for control line exhaust pressure sensor 1 -G450-

- Remove heat shield -3-.
- Open clamp -2- and pull hose which was cut during removal -1- from control line -4-.
- Renew hose -1- and tighten clamp -2-. Push heat insulation -3- over hose and clamp.

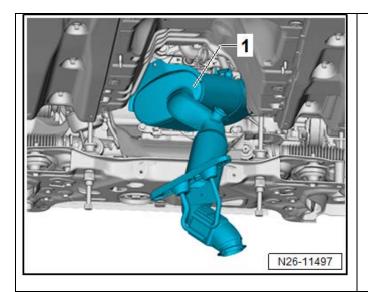


#### Installing particulate filter

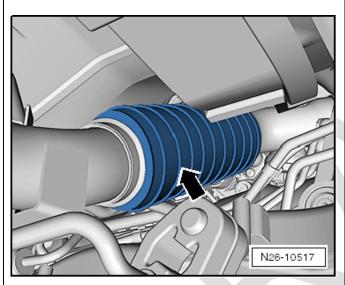
### **A** CAUTION

Danger of damaging flexible joint between particulate filter and NOx storage catalytic converter. When removing and installing:

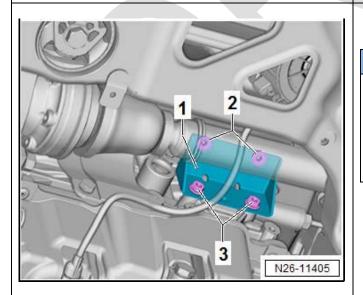
- Do not bend flexible joint more than 10°.
- Install flexible joint free of tension.
- Take care not to damage wire mesh on flexible joint.
- The flexible joint must be secured with transportation lock -T10404- to prevent overstretching.
- Always hold the particulate filter by the heavy casing when transporting or handling it.
  - Loosen nut -arrow- for bracket -1- on top of cylinder head a few turns.



- Secure electrical wiring of both upper exhaust gas temperature senders (connector colours brown and orange), the heated oxygen sensor and differential pressure sensor -G505- with tape to the top of the heat shield on the particulate filter.
- Position new clamp 1K0 253 725 over the intake funnel of the particulate filter. Orient new clamp (positioned downward) to the same clocking as the original clamp.
- Move particle filter into installation position by »turning« it into center tunnel. Take care not to damage electrical wiring or components.



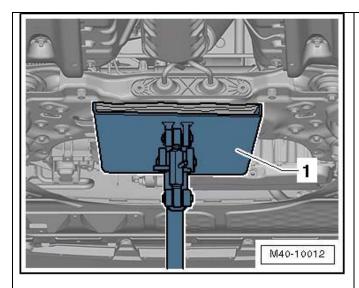
• Ensure that the transportation lock -T10404- - arrow- is properly seated.



## ! NOTE

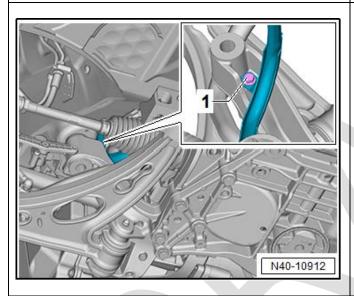
Unlike the production bracket, the supplied bracket no longer has threaded studs. It must be screwed to the particulate filter using the supplied bolts, and the nuts must be screwed on from below. The ball indentation on the bracket faces the crankcase.

- Hold bracket in place and start new bolts for nuts
   -2- in bracket from above.
- Start nuts -3- and -2- by hand a few full turns.

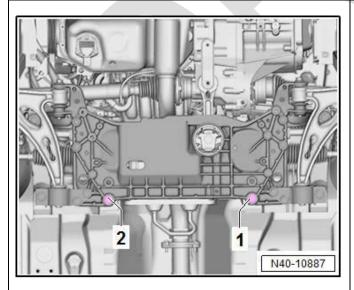


#### Installing subframe

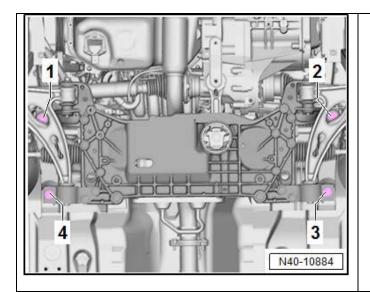
• Position engine and gearbox jack -VAS 6931-under subframe.



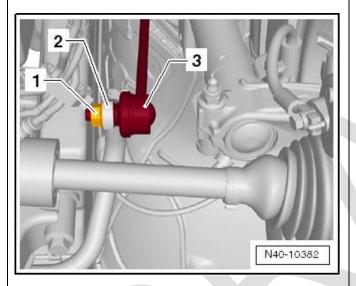
- Raise subframe about 5 cm, screw in bolt -1- and tighten to 3 Nm.
- Carefully raise subframe to installation position taking locating pins into consideration.



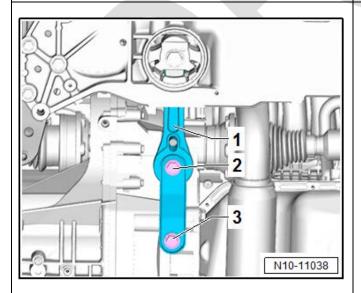
 Remove spindles 3346/2, screw in new bolts (M12 x 110 mm) at positions -1- and -2-, tighten to 50 Nm and turn an additional 120°.



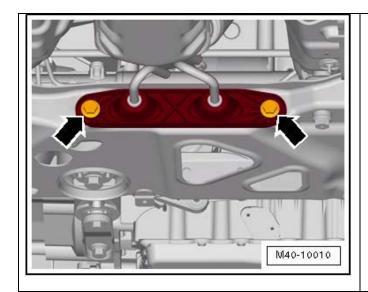
- Remove locating pins one at a time and replace them with new bolts (M12 x 90 mm).
- Tighten bolts to 70 Nm and turn them 180° further.
- Take load off engine and gearbox jack -VAS 6931- and remove it from work area.



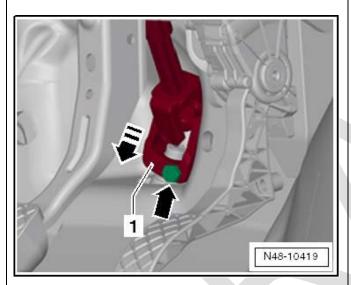
 Guide coupling rods -3- on left and right into antiroll bar, screw on new hexagon nuts -1- and tighten to 65 Nm.



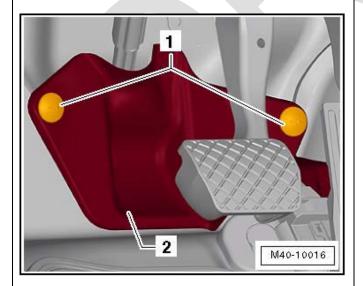
 Screw in new bolts -2- and -3- for pendulum support -1-, tighten them to 50 Nm and turn 180° further.



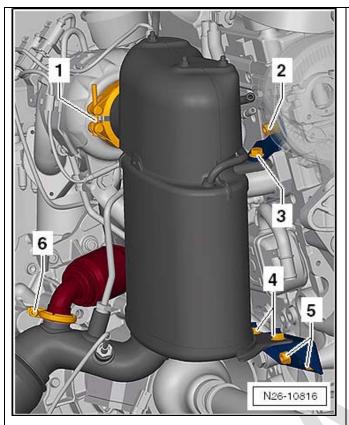
 Screw new bolts -arrows- loosely into exhaust system bracket on subframe.



Fit U-joint in -direction of arrow-, screw in new bolt –arrow– for U-joint -1- and tighten to 30 Nm.



• Position footwell trim -2- and hand-tighten bolts - 1-.



#### Tightening order for particulate filter

## U NOTE

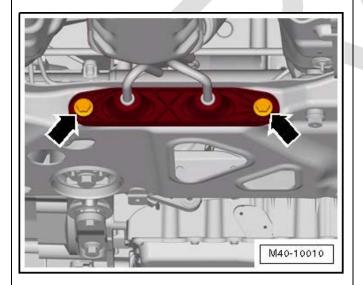
Due to restricted space, the nut -2- cannot be reached with a torque wrench. Use a commercially available 13 mm combination wrench with a 15° offset and a total length of 140 mm.

1	Position particulate filter with new seal on			
	turbocharger and secure clamp -1- loosely.			
2	Screw in bolts -2- to -5- loosely by hand.			
	<ul> <li>Particulate filter and retainer must be</li> </ul>			
	able to move			
3	Tighten clamp -1-	7 Nm		
4	Tighten nuts -5-	23 Nm		
5	Tighten nuts -4-	23 Nm		
6	Tighten nut -2-	23 Nm		
7	Tighten nut -3-	23 Nm		

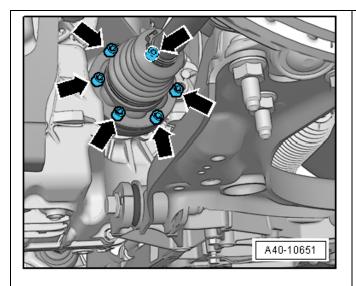
## U NOTE

#### **RISK of Exhaust Leak!**

Tightening sequence must be followed. Clamp -6- is installed when the exhaust gas recirculation filter is installed.



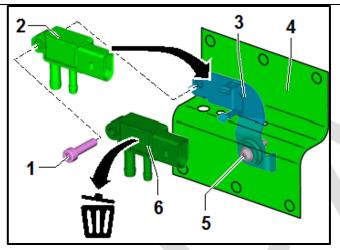
- Tighten bolts -arrows- securing exhaust system bracket to subframe to 23 Nm.
- Remove transport and protective packaging from flexible joint for particulate filter.



## ① NOTE

The lengths of the driveshaft/gearbox connecting bolts differ depending on gearbox:

- Manual gearbox = M10x52 mm (N.909.911.02)
- Dual clutch gearbox (DSG) = M10x23 mm (N.909.910.02)
  - Position right drive shaft and screw in new bolts arrows-. Tighten bolts initially to 10 Nm, then tighten further to 70 Nm.

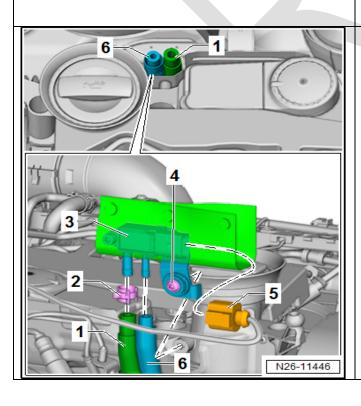


Installing exhaust pressure sensor 1 -G450-

## • NOTE

For greater clarity, exhaust pressure sensor 1 -G450is shown here from behind (perspective of plenum chamber bulkhead).

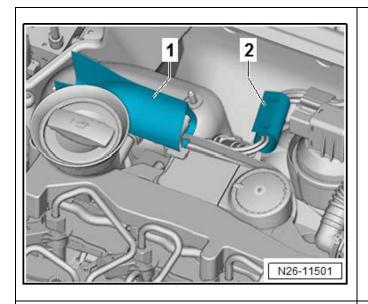
- 1 Remove bolt -1-.
- 2 Remove and dispose of old pressure sensor -
- 3 Insert new pressure sensor -2- into bracket 3-.
- 4 Screw in bolt -1- and tighten to 10 Nm.
- 5 Guide bracket with pressure sensor through openings in new heat shield -4-.



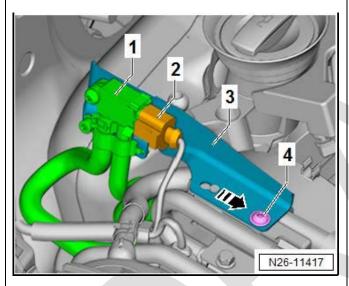
## • NOTE

Take care to connect the hoses -6- (thin) and -1- (thick) correctly.

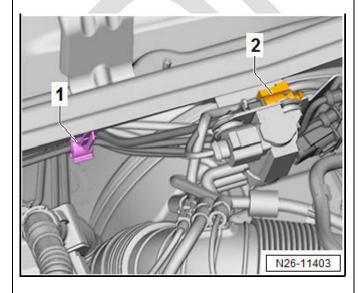
- Guide exhaust pressure sensor 1 -G450- -3- into open ends of hoses as shown and secure thicker hose -1- with new clamp -2-.
- Screw in bolt -4-, tighten to 2 Nm and connect connecter-5-.



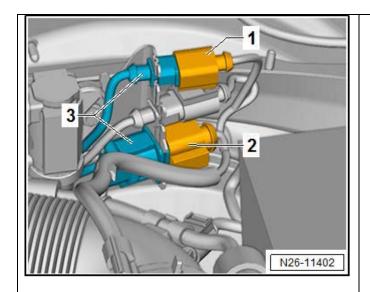
- Close fasteners on heat insulation mat -1- around exhaust pressure sensor 1 -G450-.
- Wrap new heat insulation mat -2- around wiring and close fasteners.



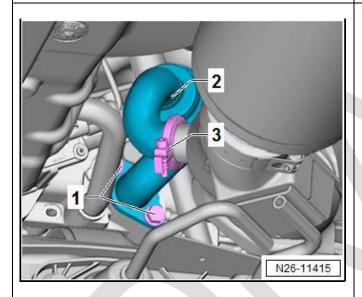
- Position bracket -3- with differential pressure sender -G505- -1- opposite -direction of arrow-, screw in new securing bolt -4- until head makes contact and tighten to 4 Nm.
- Push connector -2- onto differential pressure sensor -G505- -1-.



- Connect »brown« connector for exhaust gas temperature sender 3 -G495- -2- and secure behind bracket.
- Thread lines into brackets -1- on plenum chamber bulkhead and on turbocharger.

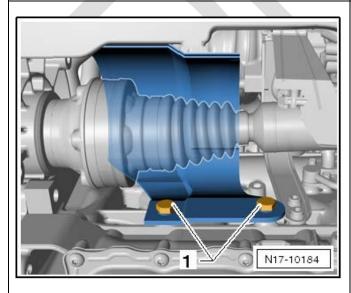


 Connect »orange« connector for exhaust gas temperature sender 2 -G448- -1- and »black« connector for heated oxygen sensor -G39- -3- on plenum chamber bulkhead and secure wiring -3in retainer.

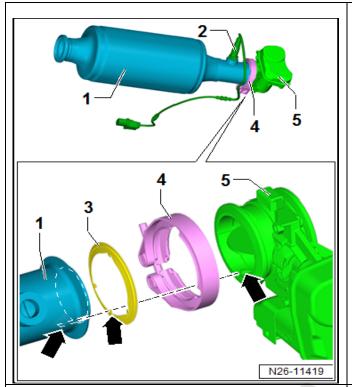


#### Installing exhaust gas recirculation filter

- Set exhaust gas recirculation filter with new seals in place, screw in bolts -1- and tighten to 9 Nm.
- Position clamp -3- and tighten to 3.5 Nm.



• Position heat shield for right drive shaft, screw in bolts -1- and tighten to 25 Nm.



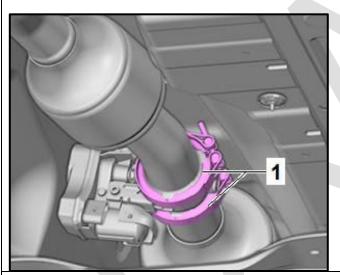
## Installing NOx storage catalytic converter with exhaust door control unit -J883-

 Screw oxygen sensor after catalytic converter -G130- -2- into NOx storage catalytic converter -1and tighten to 52 Nm.

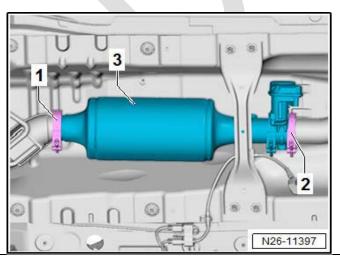
## U NOTE

The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

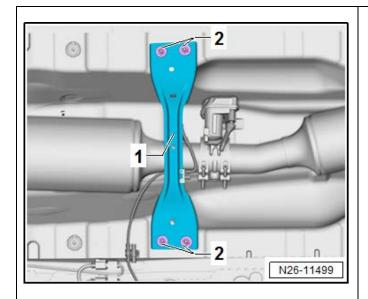
- Set new exhaust door control unit -J883- -5- with new seal -3- on NOx storage catalytic converter -1-. Note notches -arrows-.
- Position clamp 1K0 253 725 B -4- and tighten to 7 Nm.



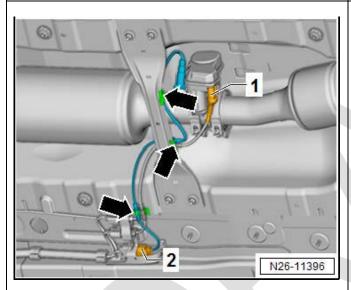
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps -1- so that they will not collide with underbody.



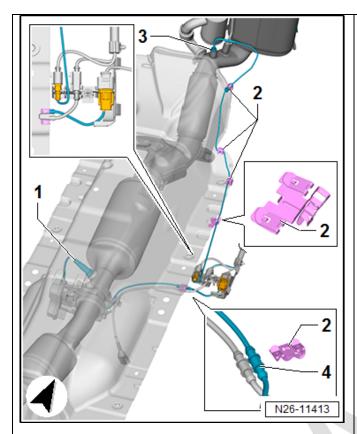
- Set clamp 1K0 253 725 B -2- in place and engage. Then tighten to 7 Nm.
- Set clamp 1K0 253 725 -1- in place and engage.
   Then tighten to 7 Nm.



 Set front tunnel cross-piece -1- in place, screw on hexagon nut -2- and tighten to 20 Nm.

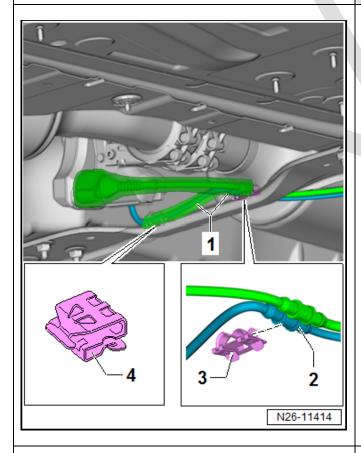


- Connect »brown« connector for oxygen sensor after catalytic converter -G130- -2- and attach to bracket.
- Push connector -1- onto exhaust door control unit. Secure lines in retainers -arrows-.

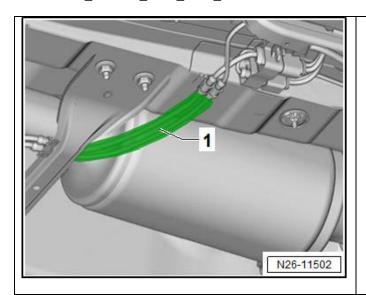


## Routing electrical wiring on underbody

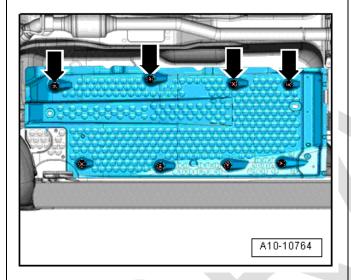
 Place electrical wiring from oxygen sensor after catalytic converter -G130- -1- and exhaust gas temperature sender 4 -G648- -3- in clips -2- on heat shield as shown. Connect connector and secure in bracket.



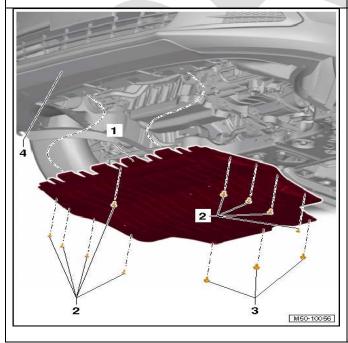
- Wrap new heat insulation mats -1- around wiring and close fasteners.
- Place wires -2- in clips -3- and -4-.



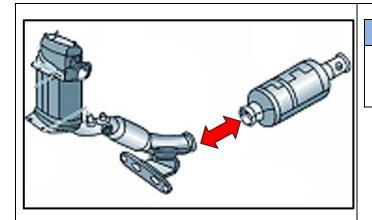
• Wrap new heat insulation mat -1- around wiring and close fasteners.



 Press underbody cladding upward and tighten nuts –arrows to 2 Nm.



- Push noise insulation -1- forward into front bumper cover -4-.
- Screw in bolts -2- and new bolts -3- and tighten as follows:
  - o Bolt -2-: 2 Nm
  - o Bolt -3-: 6 Nm (renew)



## U NOTE

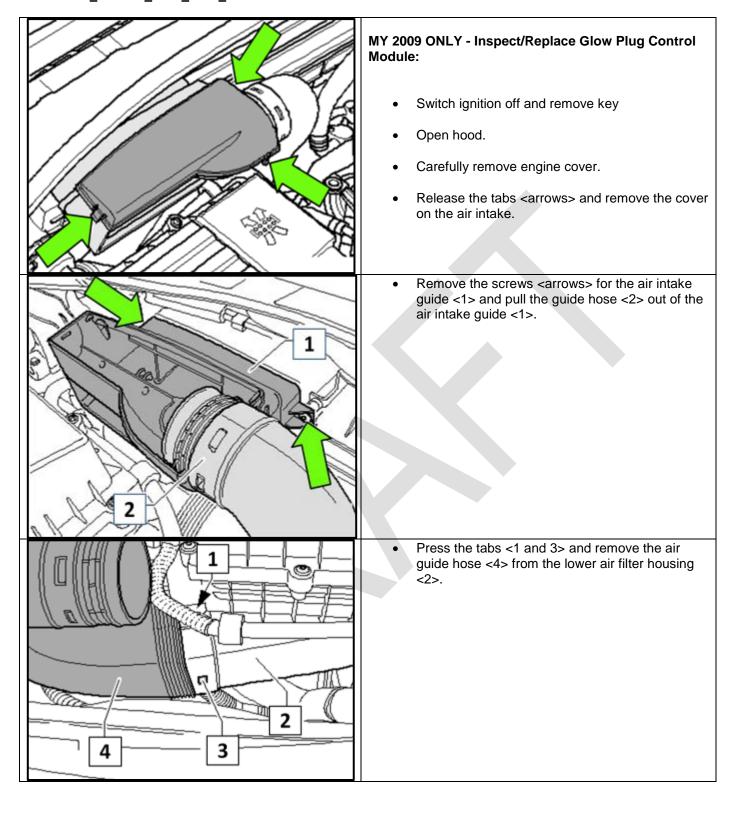
On one-piece DPF with NOx trap system (MY 2009 cars), the NOx trap must be separated from the DPF.

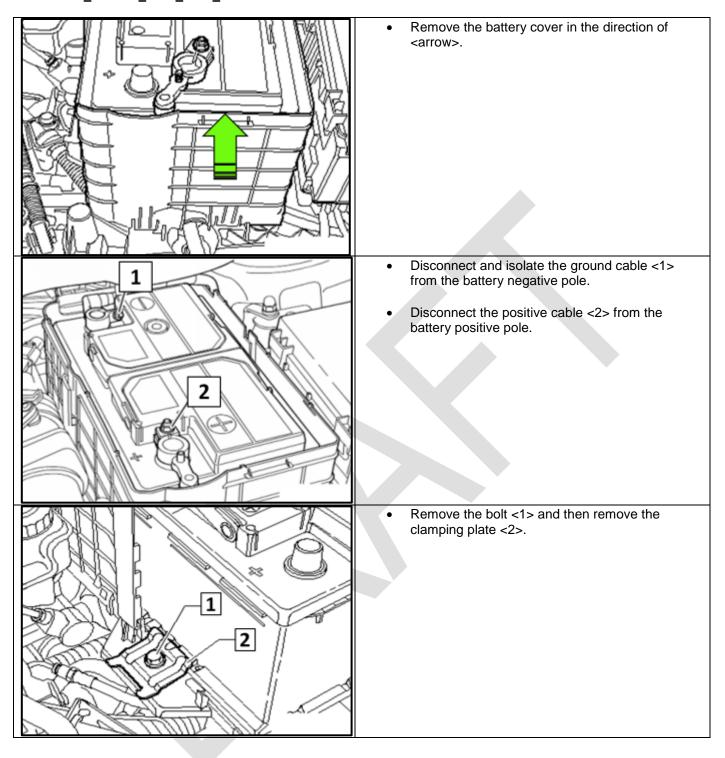
• Separate NOx trap from DPF using VAS6254 Chain Pipe Cutter (or equivalent).

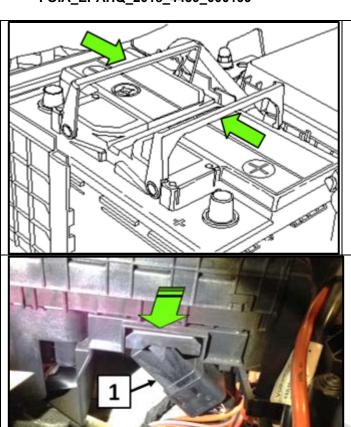


 Install the validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.

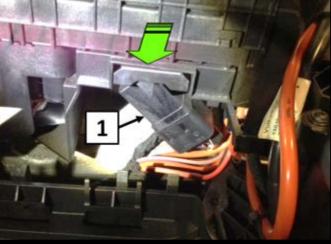
MY 2010 – 2014 Vehicles, Continue to Section F MY 2009 Vehicles, Continue next steps.







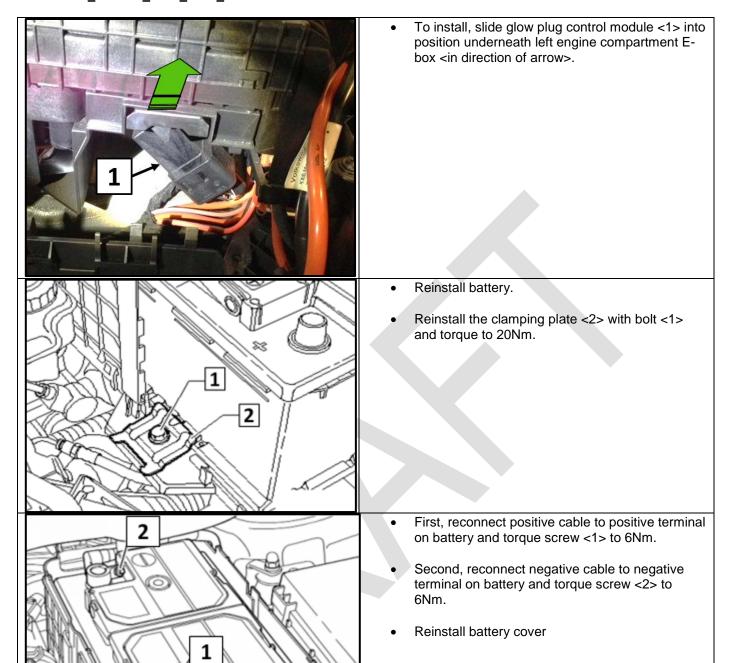
Fold up the handles <arrows> and remove the battery.

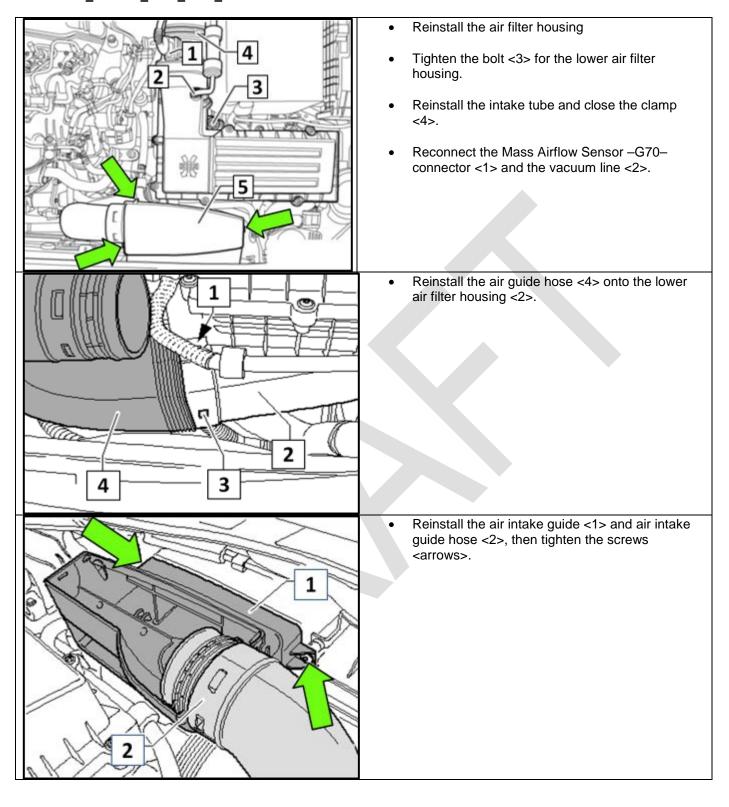


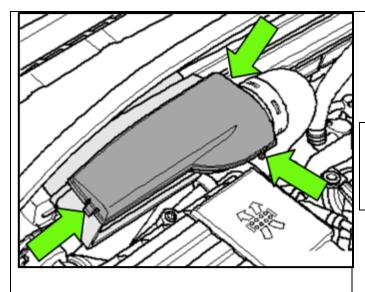
To remove, slide the glow plug control module with bracket <1> outward from underneath the left engine compartment E-box in <direction of arrow>.



- Inspect the software version of the glow plug control module <circle>.
  - If the software version <circle> is "SW 02," DO NOT REPLACE the glow plug control module.
  - If the software version <circle> is not "SW 02," REPLACE the glow plug control module with part number (03L 907 281).
- If replacing the glow plug control module, disconnect electrical connector <1>, remove screw with bracket <2> and reinstall onto new glow plug control module.







- Reinstall the cover on the air intake and secure tabs <arrows>.
- Reinstall engine cover.
- Switch on ignition



Tip: The ASR/ESP Control Lamp -K155will light up continuously until the vehicle is driven 15 to 20km/h. This will activate the Steering Angle Sensor -G85-.

- Connect Diagnostic Tester and clear faults.
- Disconnect Diagnostic Tester.
- Check and reset the clock.
- Completely open/close all power windows and set pinch protection.
- Perform function test of all electrical consumers.

#### Continue to Section F

#### Section F – Software Version Management (All Criteria)



### NOTE

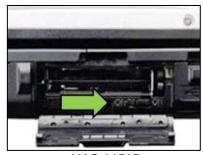
Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.

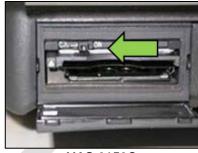
√ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

## **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

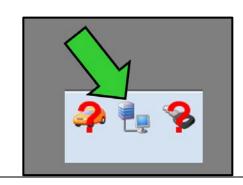
## i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: Software Version Management (SVM) Operating Instructions.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

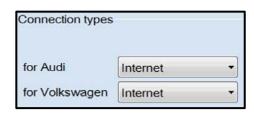
# Things to check before starting Software Version Management (SVM):

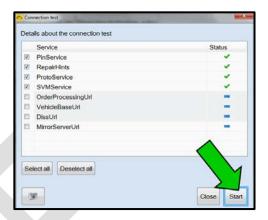
- ✓ Verify your network connection <arrow> either thru LAN or WIFI by checking the connection icon (lower right of the home screen).
- ✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

✓ Start a connections test <arrow> and verify that all connections pass.

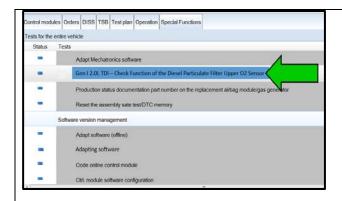




- Open the hood.
- · Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.



- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.



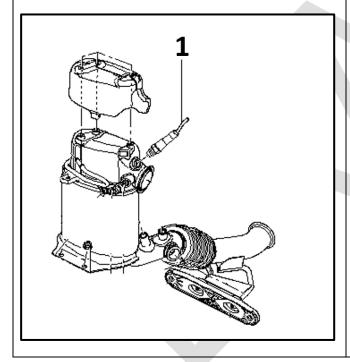
#### MY 2010 - 2014 Vehicles ONLY:

- Once the GFF scan is complete, select "Special functions," then "Gen I 2.0L TDI - Check function of the Diesel Particulate Filter Upper O2 Sensor" <arrow>, then select "Perform test".
- Follow on-screen prompts.
  - If test plan results require replacement of the DPF Upper O2 Sensor, continue next steps to replace sensor.
  - If test plan results do not require replacement of the DPF Upper O2 Sensor, continue steps for flashing.



#### RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.



- If required by test plan results, loosen and remove the original Heated Oxygen Sensor -G39-<1> from Diesel Particulate Filter using the Ring Wrench 7-piece set -3337-.
- Install new Heated Oxygen Sensor -G39- <1> (part number 03L.906.262.B) into Diesel Particulate Filter using the Ring Wrench 7-piece set -3337- and torque to 52 Nm.

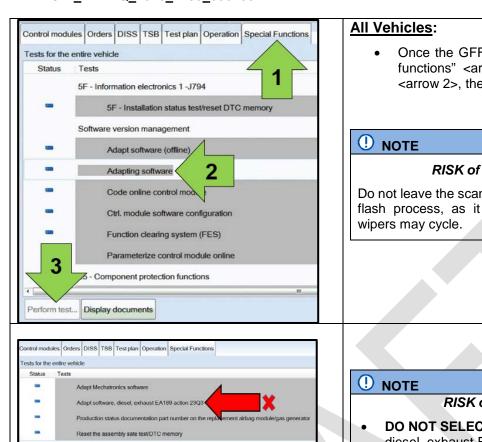


## ! NOTE

#### \*Risk of Damaging Sensor\*

Grease only the threads with Hot Bolt Paste (G 052112A3. The Hot Bolt Paste must not get into the slots on the sensor body.

Continue steps for flashing



 Once the GFF scan is complete, select "Special functions" <arrow 1>, then "Adapting software" <arrow 2>, then select "Perform test" <arrow 3>.

RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

RISK of Improper Repair!

• **DO NOT SELECT** the test plan for "Adapt software, diesel, exhaust EA189 action 23Q3" <red arrow>.

ONLY SELECT the test plan "Adapting software"
 <green arrow> to perform this repair.

 Select the appropriate option to "Update software via action code" <arrow>.

i TIP

• Read this screen carefully. The option to update software via action code is NOT always selection #1.

Services 2
Select action

With the help of the software version management (SVM), you can update the software for control modules to perform conversions and retrofits.

For this purpose, please select:

1. Update software via diagnostic address

2. Update software via action code

3. Perform modification or retrofit

4. Perform conversion/retrofit solution with license protection

5. Cancel



- Enter SVM code as listed below.
- Select "Accept" <arrow>.

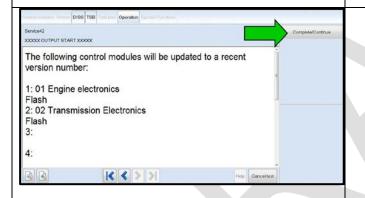
**SVM** code

3DED



#### **KESSY Vehicles!**

- Due to a weak key battery, it may be necessary to hold the key up to the reader coil during the ignition on/off process of the flash.
- Key(s) should always be left in the vehicle during the flash process.



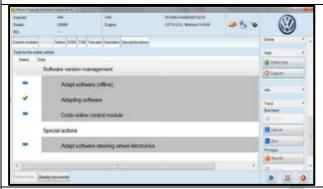
- Select "Complete/Continue" <arrow> to begin the software update process.
  - If the response indicates that the control modules are current, Flash Process is Complete, proceed to Section G.
  - If the response indicates new software versions are available <as shown>, Select "Complete/Continue" and follow the on-screen prompts to complete the test plan.



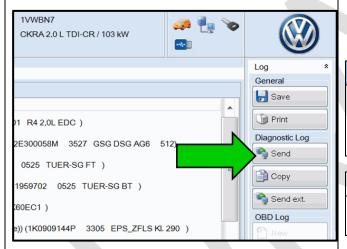
- When the SVM update is complete a confirmation message is displayed <as shown>.
- Select "Complete/Continue" <arrow>.



• Switch the ignition off, then select "Complete/Continue" <arrow>.



 The green check mark indicates the test plan was successfully carried out.



 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

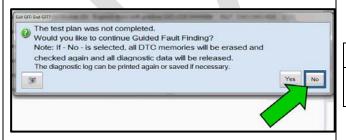
## • NOTE

#### RISK of Non-payment!

Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.



Technicians may find it helpful to also store the log on a USB stick for back-up.



i TIP

When exiting GFF, it is important to select "No" <arrow>.



### i TIP

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

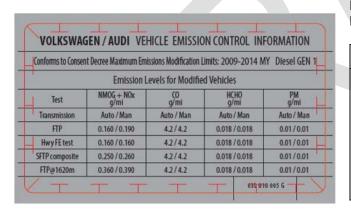
- If TPMS light illuminates, follow test plan "03 Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- Disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- · Release the parking brake.
- Perform test drive.



<u>DO NOT drive</u> vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

Proceed to Section G.

#### Section G - Supplemental Vehicle Emissions Control Information Label



03L 010 005 G

## Install Supplemental Vehicle Emissions Control Information Label

### i TIP

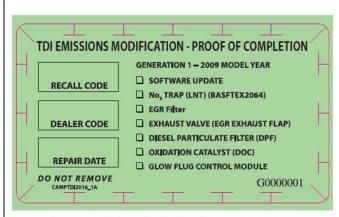
- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.
- · Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 G, in the location shown <circle>.

Proceed to Section H

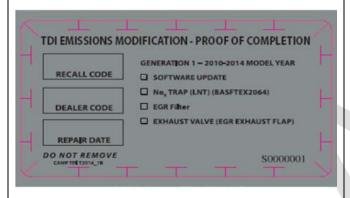




#### Section H - Campaign Completion Label



MY 2009 - CAMP TDI 2016 1A



MY 2010-2014 – CAMP TDI 2016\_1B

#### **Install Campaign Completion Label**

## i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Partial Completion Label is to be installed.
- Fill out and install the TDI Emissions Modification
   Proof of Partial Completion Label, part number:
  - o MY 2009 vehicles: CAMP TDI 2016\_1A
  - o MY 2010-2014 vehicles: **CAMP TDI 2016\_1B**

## ! NOTE

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided)
- Close the hood.

Proceed to Section I (California only).

Proceed to Section J (All without California).

#### Section I - California Only Requirements

## CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

## i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon request.</u>

#### Proceed to Section J

#### **Section J – Service Modification Documentation Requirements**



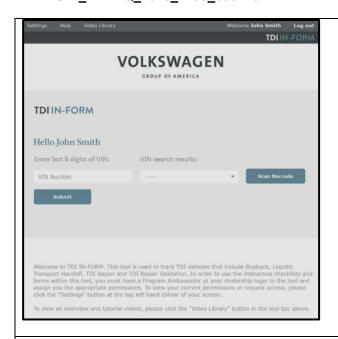
#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

### i TIP

To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

• Enter the "TDI IN-FORM" tool <arrow>.

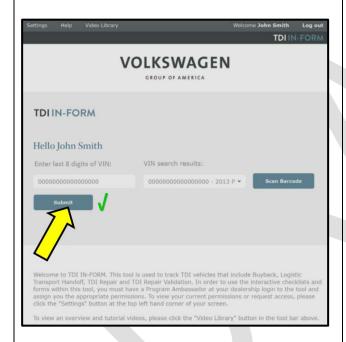


• Enter the VIN for the vehicle that requires documentation.

### i TIP

The VIN can be manually typed in or using an iPad or iPhone running iOS 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.



### i TIP

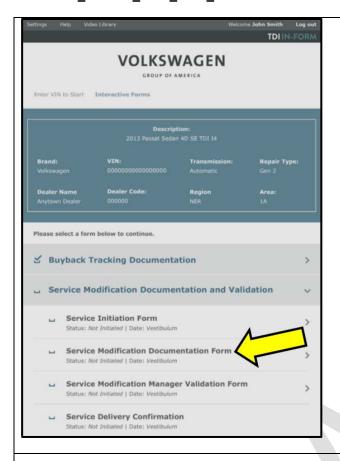
After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

- Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.
- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.



#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for



your dealership even if the modification has been completed.

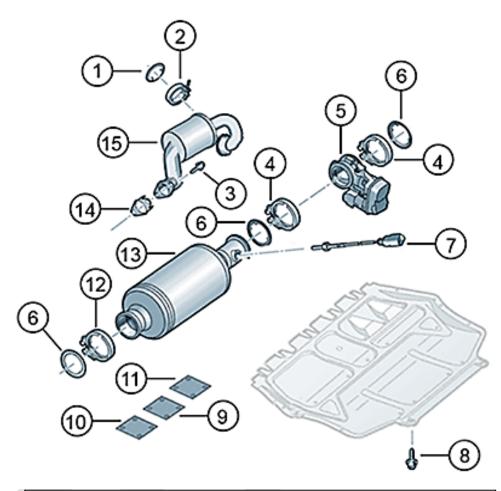
## i TIP

Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### **ALL WORK IS COMPLETE**

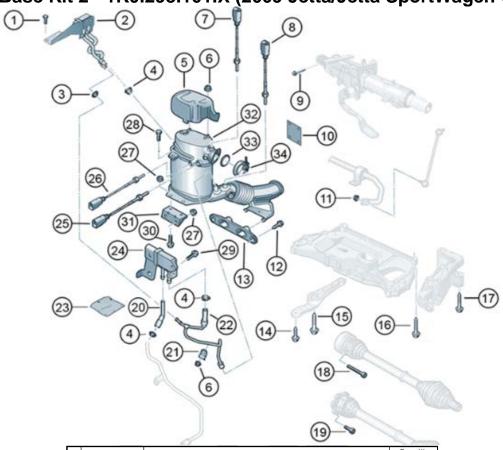
## Appendix A – Parts Kits Identification and Details

## 2.0L Base Kit 1 - 1K0.298.101.A (All MY Vehicles)



#	Part	Name	Quantity Required Per Vehicle
1	1K0253115AG	Seal	1
2	1K0253725F	Clamp	1
3	N10642103	Bolt (M8x25)	2
4	1K0253725B	Clamp (narrow)	2
5	1K0253691J	Exhaust door control unit -J883-	1
6	1K0253115AE	Seal	3
7	03L906262N	Oxygen sensor after catalytic converter -G130-	1
8	1K0825951	Bolt self-locking (M6x20)	3
8	WHT000729A	Bolt self-locking (M8x20)	3
9	1K0971461D	Heat shield (Cable for Exhaust door control unit –J883-)	1
10	1K0971461E	Heat shield (Cable for Oxygen sensor –G130-)	1
11	1K0971461F	Heat shield (Cable for Oxygen sensor and Exhaust door control unit)	1
12	1K0253725	Clamp	1
13	1K0254402AX	NOx storage catalytic converter	1
14	03G131547H	Seal	1
15	1K0253120B	Exhaust gas recirculation filter	1

## 2.0L Base Kit 2 - 1K0.298.101.X (2009 Jetta/Jetta SportWagen Only)



#	Part	Name	Quantity Required Per Vehicle
1	N90737105	Bolt	1
2	1K0131552B	Differential pressure sender -G505-	1
3	3C0131483A	Spring clamp	3
4	4B0422379	Spring clamp	1
5	5N0131783	Heat shield	1
6	N02300215	Nut M6	4
7	03L906262B	Oxygen sensor -G39-	1
8	03L906088EG	Exhaust gas temperature sender –G648-	1
9	N01033513	Bolt for U-joint	1
10	5N0971461	Heat shield	1
11	N0150816	Nut	2
12	N10240003	Bolt (M8x32)	2
13	1K0253144BC	Exhaust system bracket	1
14	N91066101	Bolt (M10x35)	1
15	N91167101	Bolt (M10x75)	1
16	WHT000431A	Bolt M12x110	2
17	N91039802	Bolt M12x90	4
18	N90991102	Bolt (M10x52) - Manual Transmission	6
19	N90991002	Bolt (M10x23) - DSG Transmission	6
20	03G131525	Hose for control line	1
21	1K0131649	Retainer	1
22	1K0131552A	Control line	1
23	1K0971461C	Heat shield	1
24	076906051A	Exhaust pressure sensor 1 -G450-	1
25	03L906088T	Exhaust gas temperature sender – G448-	1
26	03L906088J	Exhaust gas temperature sender – G495	1
27	N01508315	Nut M8	4
28	N10653102	Bolt	1
29	N10456201	Bolt M6x25	1
30	N90786502	Bolt	2
31	1K0253463AF	Bracket	1
32	1K0254708GX	Particulate filter	1
33	04L253115A	Seal	1
34	1K0253725	Clamp	1



### **Content**

Summary of relevant Appendix B paragraphs

Repair Instructions Volkswagen

**Repair Instructions Audi** 

# **Emissions Recall**

Code: 23Q4 CONFIDENTIAL DRAFT 01/23/2017

Subject

2.0L TDI Engine (GEN 1) Emissions Control Software – TDI Vehicles USA ONLY

**Release Date** 

Month XX, 2017

**Affected Vehicles** 

U.S.A.: 2010-2014 MY Audi A3 2.0L TDI

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

**Problem Description** 

The Environmental Protection Agency and California Air Resources Board have determined that Audi A3 vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

**Corrective Action** 

Install updated emissions control system software, install a TDI Emissions Modification – Proof of Partial Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Audi may not be able to perform the emissions modification until the customer corrects such modification.

**Code Visibility** 

On or about Month XX, 2017, this campaign code will show open on affected vehicles in Elsa.

On or about Month XX, 2017, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.audiusa.com">www.audiusa.com</a>.

**Owner Notification** 

Owner notification will take place in Month 2017.

Emissions Campaigns Requirements (CALIFORNIA ONLY) The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.accessaudi.com">www.accessaudi.com</a>.

**Additional Information** 

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Partial Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Labels can be ordered via the Compliance Label Ordering portal at <a href="https://www.accessaudi.com">www.accessaudi.com</a>.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order. If customer refused campaign work:

✓ U.S. dealers: Submit the request through Audi Warranty Online under the Campaigns/Update option.

✓ <u>U.S. dealers:</u> Submit the request through Audi Warranty Online under the <u>Campaigns/Update</u> option.				
Service Number	23Q4			
Damage Code	0099			
Parts Vendor Code	002			
Claim Type	Sold vehicle: 7 10			
	Unsold vehicle: 7 90			
Vehicle Wash/Loaner	Do not claim wash/loaner under this action			
Criteria I.D.	8V			
	Install <u>Base Kit I components</u> , perform software update, and install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Labor operation: 2360 23 99 270 T.U.			
	Part number	Description	Quantity	
	1K0.298.101.A	Base Kit I	1	
	*Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.			
	***OR***			
	*If necessary determined by DPF Upper O2 sensor test plan results, install <u>Base Kit I components</u> , DPF O2 Sensor, perform software update, and install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Labor operation: 2360 25 99 280 T.U.			
	Part number	Description	Quantity	
	1K0.298.101.A	Base Kit I	1	
	03L.906.262.B DPF Upper O2 sensor 1  *Additional shipments will be released based on the volume of completed			
	repairs claimed through SAGA. The parts will not be available for order through			

the website at this time.

### **Campaign Work Procedure**

**TDI Vehicles Only** 

23Q4 Emissions Recall



### ① NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

### **Required Parts**

Quantity	Part Number	Part Description
1	1K0.298.101.A	Base Kit I
1 (if necessary)	03L.906.262.B	Upper O2 sensor
1	03L 010 005 G	Supplemental Vehicle Emissions Control Information Label
1	CAMPTDI 2016_1B	TDI Emissions Modification – Proof of Partial Completion Label

Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

### **Required Tools**





- VAS6150X Diagnostic Tester (or equivalent)
- VAS5054X Remote Diagnosis Head (or equivalent)

GRX3000VAS - Battery Tester/Charger



• Socket 22mm -T10491-



• Torque wrench -V.A.G 1331- (or equivalent)



Torque wrench -V.A.G 1332- (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com

### i TIP

This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

### **UNOTE**

### RISK of Non-payment!

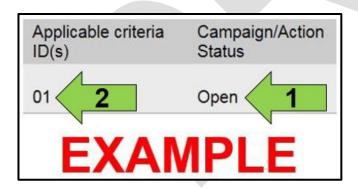
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

### **Emissions Modification Instruction**

### Section A - Check for Previous Emissions Modification

### i TIP

If the TDI Emissions Modification – Proof of Partial Completion Label (CAMP TDI 2016\_3A) is present, no further work is required.

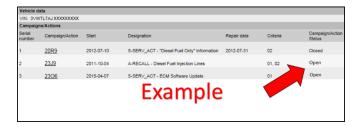


• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

### i TIP

On the date of modification, print this screen and keep a copy with the repair order.

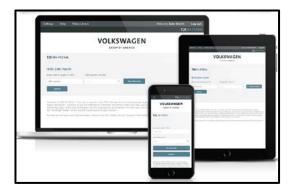
- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.



- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

Proceed to Section B.

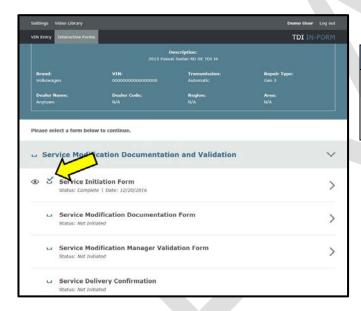
#### Section B - Emissions Modification Procedure



### U NOTE

### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



### U NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate
     Service Modification Documentation
     Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

Continue to Section C

### Section C - Check for Pre-existing MIL ON Conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, obtain GFF diagnostic log, create an ATA ticket and contact the Audi Technicians Helpline.
  - If MIL is not illuminated, continue work procedure.

### i TIP

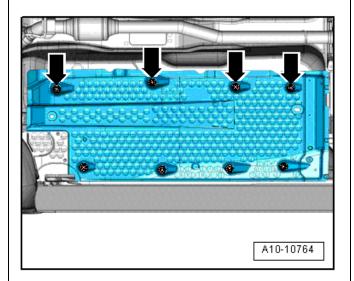
 ATA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.

Check for vehicle modifications from original equipment.

- If vehicle modifications from original equipment related to emissions components <u>are</u> found, STOP, create a ATA ticket and contact the Audi Technicians Helpline.
- If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue work procedure.

#### **Proceed to Section D**

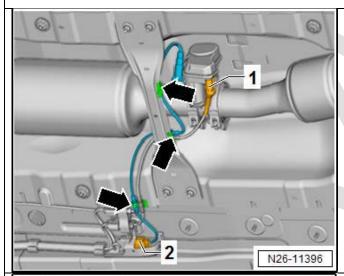
### Section D - Kit Installation



- Open hood.
- Raise vehicle on hoist.
- Unscrew nuts -arrows- and pull underbody cladding down slightly.



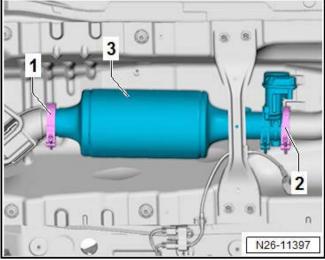
A wedge could be placed between vehicle body and cladding to allow more work space.



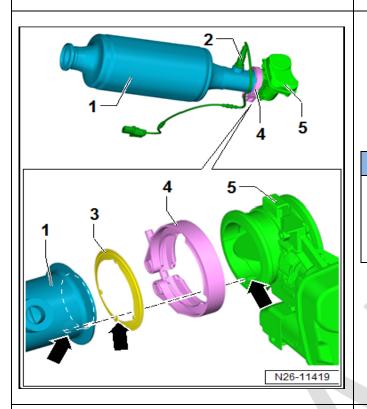
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- -2-.
   Remove plug from retainer.
- Open fasteners for heat shield and pull connector
   -1- off exhaust door control unit -J883- and thread wiring out of retainers -arrows-.

i TIP

Take a photo of this area now for help with harness routing during reinstallation later.



 Loosen clamps -1- and -2- and remove NOx storage catalytic converter together with exhaust door control unit -J883-.

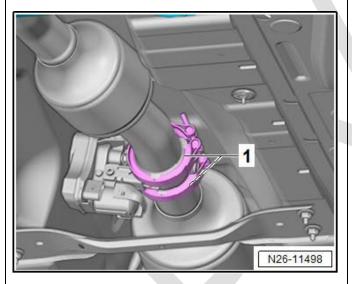


- Screw new oxygen sensor after catalytic converter -G130- -2- into new NOx storage catalytic converter -1- and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- -5- with new seal -3- on NOx storage catalytic converter -1-. Note notches -arrows-.

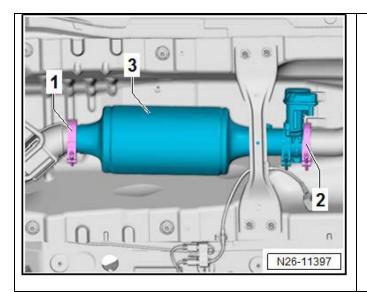
### U NOTE

Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

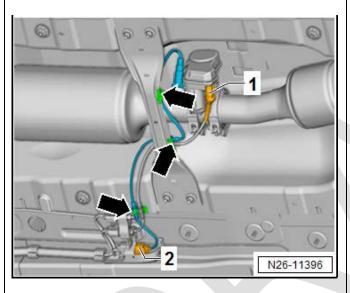
- Position clamp 1K0 253 725 B -4- and tighten to 7 Nm.
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.



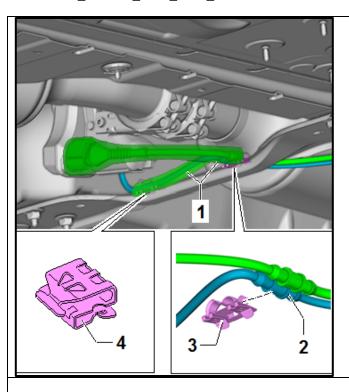
• Position all clamps -1- so that they will not collide with underbody.



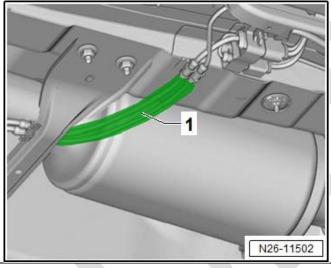
- Set clamp 1K0 253 725 B -2- in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 -1- in place and engage. Then tighten to 7 Nm.



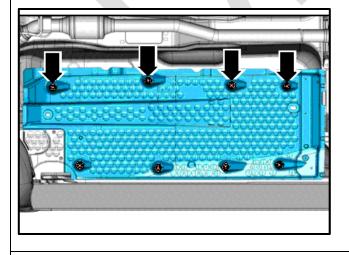
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- -2- and attach to bracket.
- Push connector -1- onto exhaust door control unit. Secure lines in retainers -arrows-.



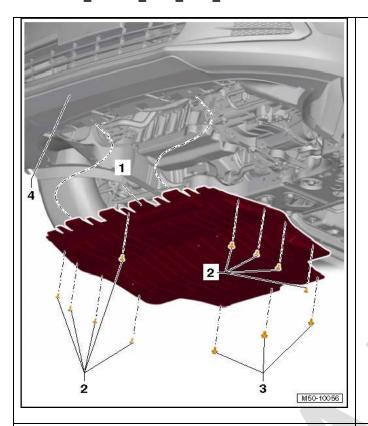
- Wrap new heat insulation mats -1- around wiring and close fasteners.
- Place wires -2- in clips -3- and -4-.



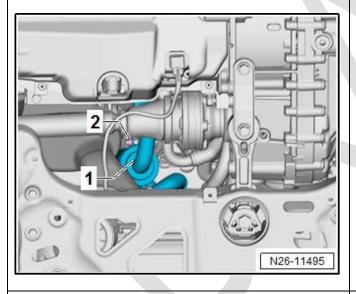
 Wrap new heat insulation mats -1- around wiring and close fasteners.



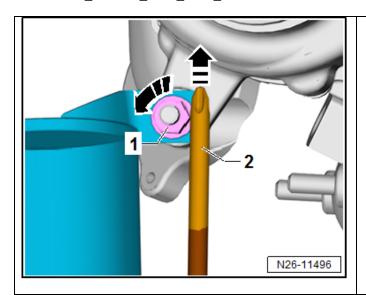
 Press underbody cladding upward and tighten nuts –arrows to 2 Nm.



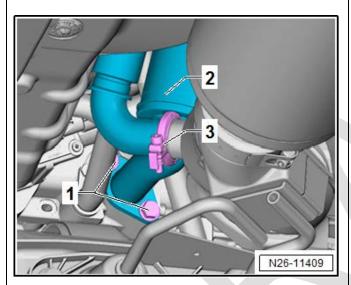
- Remove bolts -2- and -3-.
- Pull noise insulation -1- back, out of front bumper cover -4-.



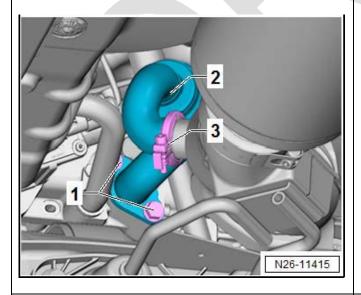
- Remove nut -2- from exhaust gas recirculation filter -1- from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



Apply screwdriver -2- on side of nut -1- and unscrew nut while simultaneously pressing up on nut.

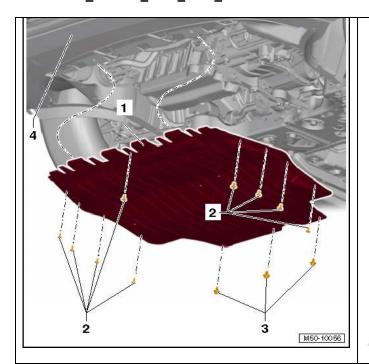


- Open clamp -3- and remove it.
- Remove bolts -1- and remove exhaust gas recirculation filter -2-.

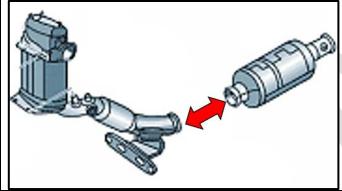


- Set new exhaust gas recirculation filter -2- with new seals in place, screw in bolts -1- and tighten to 9 Nm.
- Position clamp -3- and tighten to 3.5 Nm.

Description	Part number
EGR Filter	1K0.253.120.B
Seal	03G.131.547.H
Seal	1K0.253.115.AG
Clamp	1K0.253.725.F



- Push noise insulation -1- forward into front bumper cover -4-.
- Screw in bolts -2- and new bolts -3- and tighten as follows:
  - o Bolt -2-: 2 Nm
  - o Bolt -3-: 6 Nm (renew)



### U NOTE

The NOx trap must be separated from the DPF.

Separate NOx trap from DPF.



Install the validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.

#### Continue to Section E

#### Section E – Emissions Modification Procedure

### ! NOTE

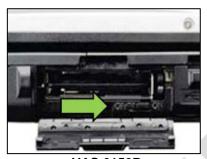
Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.

- Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
   It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

### **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

### i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

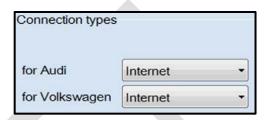
Things to check before starting Software Version Management (SVM):

✓ Verify your network connection through LAN by checking the connection icon (lower right of the home screen).

✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.



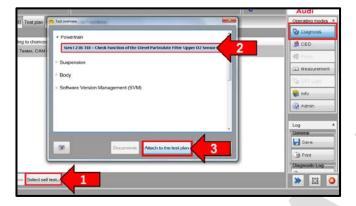


✓ Start a connections test <arrow> and verify that all connections pass.

- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150X Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB



cable to the diagnostic head and then reattach to the vehicle.

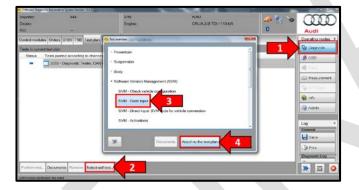


• Upon ODIS startup, select "Diagnosis".

Select "Self Test" <arrow 1>.

 Select "Gen I 2.0L TDI – Check Function of the Diesel Particulate Filter Upper O2 Sensor" <arrow 2>.

• Select "Attach to the test plan" <arrow 3>.

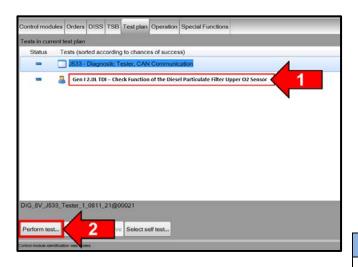


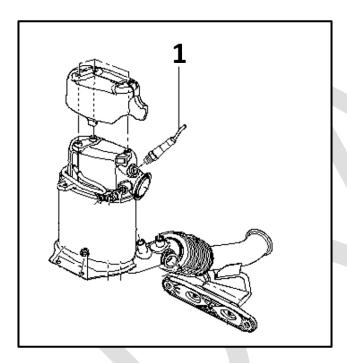
• Upon ODIS startup, select "Diagnosis" <arrow 1>.

Select "Self Test" <arrow 2>.

 Select "Software Version Management", then select "SVM Code input" <arrow 3>.

• Select "Attach to the test plan" <arrow 4>.





- From the Test plan screen, select "Gen I 2.0L TDI –
  Check function of the Diesel Particulate Filter Upper
  O2 Sensor" <arrow 1>, then select "Perform test"
  <arrow 2>.
- Follow on-screen prompts.
  - If test plan results require replacement of the DPF Upper O2 Sensor, continue next steps to replace sensor.
  - If test plan results do not require replacement of the DPF Upper O2 Sensor, continue steps for flashing.

### U NOTE

#### RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

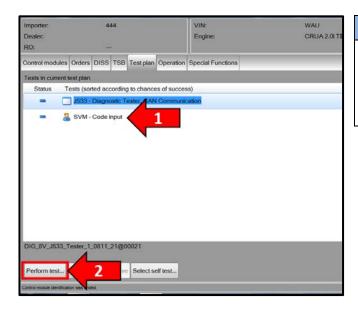
- If required by test plan results, loosen and remove the original Heated Oxygen Sensor –G39–<1> from Diesel Particulate Filter using the Ring Wrench 7-piece set –3337–.
- Install new Heated Oxygen Sensor –G39–<1>
   (part number 03L.906.262.B) into Diesel
   Particulate Filter using the Ring Wrench 7-piece
   set –3337– and torque to 52 Nm.

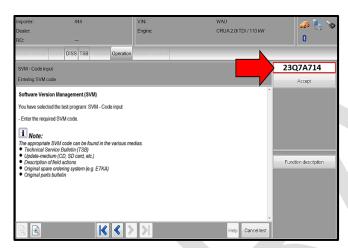
### ! NOTE

### \*Risk of Damaging Sensor\*

Grease only the threads with Hot Bolt Paste (G 052112A3. The Hot Bolt Paste must not get into the slots on the sensor body.

### Continue steps for flashing





### ① NOTE

### RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

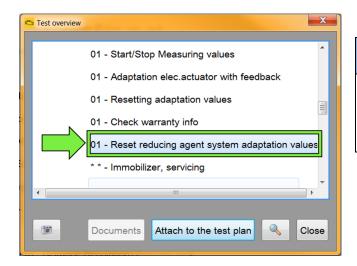
- From the Test plan screen, Select "SVM Code input" test plan <arrow 1>, then select "Perform test" <arrow 2>.
- Follow the on-screen prompts.

- Enter SVM code "23Q7A714" <arrow>, then select "Accept".
- Follow the on-screen prompts.



#### **KESSY Vehicles!**

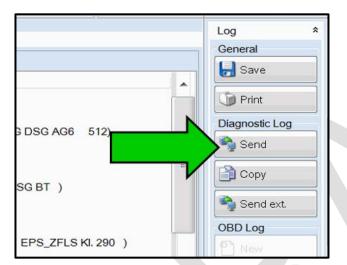
- Due to a weak key battery, it may be necessary to hold the key up to the reader coil during the ignition on/off process of the flash.
- Key(s) should always be left in the vehicle during the flash process.





After flashing, the vehicle will not start due to adaptation values for reducing agent missing. Perform test plan to reset reducing agent adaptation values prior to attempting to start vehicle.

- Perform "Reset reducing agent system adaptation values" <arrow>.
- At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.



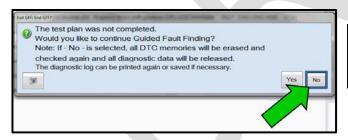


#### RISK of Non-payment!

Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.



Technicians may find it helpful to also store the log on a USB stick for back-up.

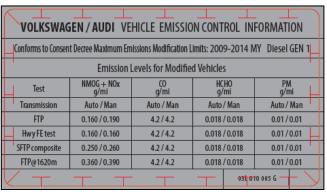




When exiting GFF, it is important to select "No" <arrow>.

Proceed to Section F.

### Section F – Supplemental Vehicle Emissions Control Information Label



#### **Install Supplemental Vehicle Emissions Control** Information Label



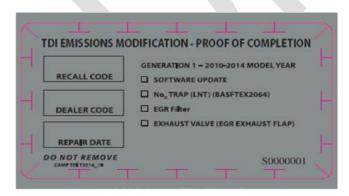
- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in location shown.
- Photo documentation of label installed is required.



- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the Supplemental Vehicle Emissions Control Information Label, 03L 010 005 G, in the location shown.

**Proceed to Section G** 

### Section G – TDI Emissions Modification – Proof of Partial Completion Label



MY 2010-2014 - CAMP TDI 2016 1B

### Install TDI Emissions Modification – Proof of Partial **Completion Label**



- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- When affixing the label, keep in mind that in the future, a Phase 2 completion label will also need to be affixed at a later date alongside this Phase 1 completion label.

- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Partial Completion Label is to be installed.
- Fill out and affix TDI Emissions Modification –Proof of Partial Completion Label, part number CAMP TDI 2016\_1B.

### ① NOTE

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided).
- Close the hood.

Proceed to Section H (California only).

### Section H - California Only Requirements

### CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.accessaudi.com.

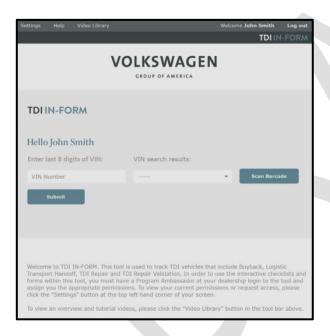
### i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon request</u>.

Proceed to Section I

### Section I – Service Modification Documentation Requirements





#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

### i TIP

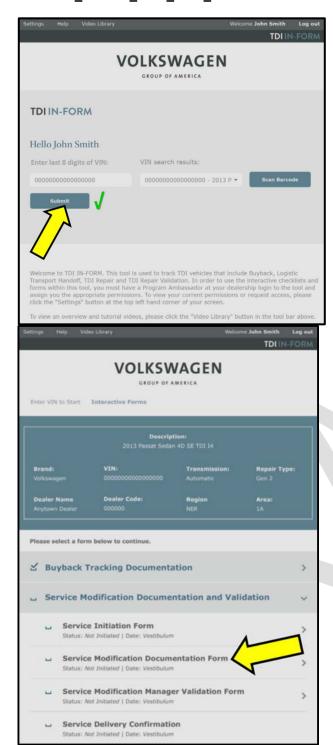
To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

- Enter the "TDI IN-FORM" tool <arrow>.
- Enter the VIN for the vehicle that requires documentation.

### i TIP

The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.



i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.



### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

**Proceed to Section J** 

### Section J - Campaign Stamp

I certify that this campaign
has been performed in strict
accordance with the applicable
Audi repair procedure.

SAGA Code:
Technician:
Date:

Item#: AUD4927ENG

- Once the campaign has been completed, the technician should stamp the repair order.
- Stamps are available for ordering through the Compliance Label Ordering Portal (item# AUD4927ENG).

### **ALL WORK IS COMPLETE**



### VOLKSWAGEN AKTIENGESELLSCHAFT



Transmission Test Groups 9VWXV02.035N, 9VWXV02.0U5N, AVWXV02.0U5N, BVWXV02.0U5N, CVWXV02.0U5N, DVWXV02.0U5N, EVWXV02.0U5N Repair Instructions – Update July 2nd, 2017

paragraphs

4.3.13





### **Document summary and structure**

### **Summary of this document**

This documents provides repair instructions and dealer communications for Volkswagen and Audi Dealers.

Due to technical differences between model years 2009 and 2010 – 2014, the scope of emissions modification mentioned in the repair instruction for model years 2009 is larger then the repair instructions for model years 2010 – 2014

### Structure of this document

- ▶ Repair instructions Volkswagen
- ▶ Repair instructions Audi

The content of this document shall be regarded as Confidential Business Information





## Overview over changes made compared to document submitted on **January 25th, 2017**

Page added compared to submission on Jan 25th, 2017

Pages	Topic	Changes
7 ff.	Repair Instructions	<ul> <li>Updated repair instructions with lessons learned from Gen3</li> </ul>





### **Content**

### **Summary of relevant Appendix B paragraphs**

Repair Instructions Volkswagen

Repair Instructions Audi





# Submission on Appendix B – Proposed Emissions Modification: Part A 4.3.13 – Repair instructions

Subparagraph

4.3.13

**Test Group** 

EA189 Gen1 MY 2009 - 2014 - 9VWXV02.035N, 9VWXV02.0U5N, AVWXV02.0U5N, BVWXV02.0U5N, CVWXV02.0U5N, DVWXV02.0U5N, EVWXV02.0U5N

#### Overview of submissions

### **Appendix B excerpt**

Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs., tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

### End products and underlying measurements

- Repair instructions Volkswagen
- Repair instructions Audi





### Content

Summary of relevant Appendix B paragraphs

**Repair Instructions Volkswagen** 

Repair Instructions Audi





## **Repair instructions VW**

Attached document changed compared to submission on Januray 25th, 2017 Updates highlighted yellow

### **Emissions Recall**

**Code: 23U3** 

### **CONFIDENTIAL DRAFT 06/28/2017**

Subject

2.0L TDI Engine (GEN 1) Emissions Modification – Customer Only (Retail Sold) <u>USA</u> <u>ONLY</u>

Release Date
Affected Vehicles

MONTH XX, 2017

U.S.A. ONLY: 2009-2014 MY Volkswagen 2.0L TDI (Gen 1), Customer (Retail Sold) Only

	Country	Model Year	Vehicle Carline
Ī	USA 2009-2014	Jetta	
		2009-2014	Jetta SportWagen
			Beetle
			Beetle Convertible
			Golf

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

**Problem Description** 

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

**Corrective Action** 

Install updated emissions control system parts and software, install a TDI Emissions Modification – Proof of Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

**Code Visibility** 

On or about Month XX, 2017, this campaign code will show open and available for repair on affected vehicles in Elsa.

On or about Month XX, 2017, affected vehicles will be identified and open for repair with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

**Owner Notification** 

Owner notification will take place in MONTH 2017.

Alternate Transportation As a reminder, customers are eligible to receive alternate transportation for repairs exceeding 3 hours.

Emissions Campaigns Requirements (CALIFORNIA ONLY) The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at www.vwhub.com.

**Additional Information** 

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.



#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action open on the day of repair to the repair order.

If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit request via WISE under the *Campaigns/Update/Recall Closure* option.

<u>0.5. dealers.</u> Submit request via wrote under the Campaigns/Opuate/Necail Closure option.		
Service Number	23U3	
Damage Code	0099	
Parts Vendor Code	wwo	
Claim Type	Sold vehicle: 7 10	
Vehicle Wash	Do not claim wash under this action.	
Loaner Vehicle	As a reminder, customers are eligible to receive a loaner vehicle for repairs exceeding 3 hours.  Outside Material – Loaner Vehicle (one day maximum):  Description  Dollar Amount	
	Description	
	LOANER	Up to \$35.00
Criteria I.D.	01 – Model Year 2009 ONLY	

Information label and TDI Emissions Modification Label.

Labor operation: 2360 22 99 570 T.U.

Part number	Description	Quantity
1K0.298.101.A	Base Kit I	1
1K0 254 402 AX	NOx Catalyst	1
1K0.298.101.X	Base Kit II	1
03L.907.281	Glow Plug Control Module	1

\*Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

\*\*Labels are sent free of charge. They cannot be charged to this campaign.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

#### Criteria I.D. 02 - Model Years 2010-2014

\*Install <u>Base Kit I components</u>, install NOx catalyst, perform software update, and \*\*install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.

Except Beetle Convertible – Labor operation: 2360 23 99 270 T.U.

Beetle Convertible ONLY – Labor operation: 2360 24 99 290 T.U.

Part number	Description	Quantity
1K0.298.101.A	Base Kit I	1
1K0 254 402 AX	NOx Catalyst	1

\*Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

\*\*Labels are sent free of charge. They cannot be charged to this campaign.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

## **Campaign Work Procedure**

### 23U3 Emissions Recall

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.



Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

## **Required Parts**

<b>Criteria</b>	Quantity	Part Number	Part Description
01, 02	1	1K0.298.101.A	Base Kit I
01, 02	1	1K0 254 402 AX	NOx Catalyst
<mark>01</mark>	1	1K0.298.101.X	Base Kit II (MY 2009 only)
01	1	03L.907.281	Glow Plug Control Module (MY 2009 only)
01, 02	1	03L 010 005 G	Vehicle Emissions Control Information Label
01	1	Camp TDI 2016 1A	TDI Emissions Modification Label (MY 2009)
02	1	Camp TDI 2016 1B	TDI Emissions Modification Label (MY 2010-2014)

Labels are sent free of charge. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

For any additional inquiries contact <u>labelrequest@vw.com</u>.

## **Required Tools**



VAS6150X – Diagnostic Tester (or equivalent)

VAS5054A – Remote Diagnosis Head (or equivalent)



GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com

### i TIP

This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

# U NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed. Look for the image below to indicate labor operations, parts, or labeling that requires IN-FORM tool image documentation.





Socket 22mm -T10491-



Torque wrench -V.A.G 1332- (or equivalent)



Torque wrench -V.A.G 1332- (or equivalent)



Locating pins -T10096-



Hose clamp pliers -VAS 6362- (or equivalent)



Engine and gearbox jack -VAS 6931-



Transportation lock for flexible joint -T10404-



Tool set -T10395 A-



-3346- Note: 2 Spindles 3346/2 with nuts 3346/3 from assembly tool -3346-



VAS6254 – Chain Pipe Cutter (or equivalent)

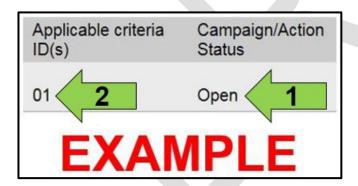
### **Emissions Modification Instructions**

### **Section A - Check for Previous Emissions Modification**

i TIP

If the correct TDI Emissions Modification Label is present, no further work is required.

- MY 2009 vehicles: CAMP TDI 2016 1A
- MY 2010-2014 vehicles: CAMP TDI 2016\_1B



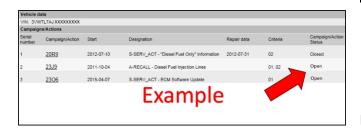
• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.







### RISK of Non-payment!

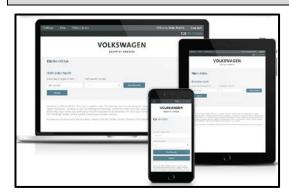
Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed. Look for the image below to indicate labor operations, parts, or labeling that requires IN-FORM tool image documentation.

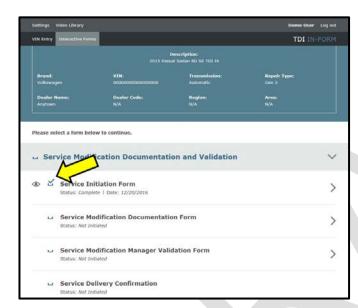


- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

#### **Proceed to Section B**

#### Section B - Check for Service Initiation







#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed. Look for the image below to indicate labor operations, parts, or labeling that requires IN-FORM tool image documentation.



# • NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate
     Service Modification Documentation
     Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

**Proceed to Section C** 

#### Section C – Check for Pre-existing conditions, MIL light on, and Vehicle Modifications

- Perform a visual inspection of the intake, exhaust, and emissions systems.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals damage or concerns, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals no damage or concerns, continue the work procedure.
- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components are found, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are not found, continue the work procedure.
- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue the work procedure.

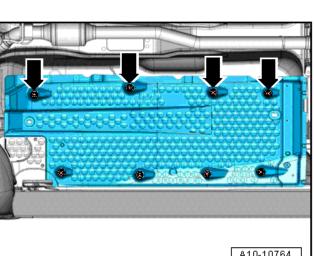


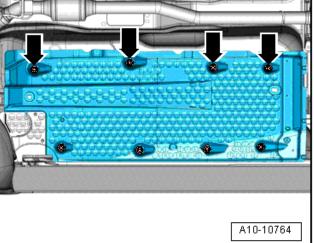
- VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.
- The purpose for this step is to document vehicle condition prior to initiation of this action and does not authorize the repair of any pre-existing conditions.

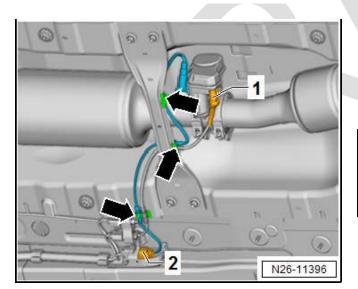
**Proceed to Section D** 



### Section D – Repair Procedure (Criteria <mark>02</mark> – MY 2010-2014 ONLY)







## i TIP

Section D addresses vehicles built with a two-piece Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in MY 2010. For vehicles built with a one-piece system, the DPF must be replaced as there is no connection on the original components.

Begin with Section E for one-piece DPF/Lean NOx trap systems.

- Open hood.
- Raise vehicle on hoist.
- Unscrew nuts <arrows> and pull underbody cladding down slightly.

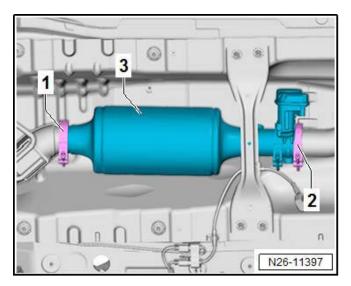
# i TIP

A wedge could be placed between vehicle body and cladding to allow more work space.

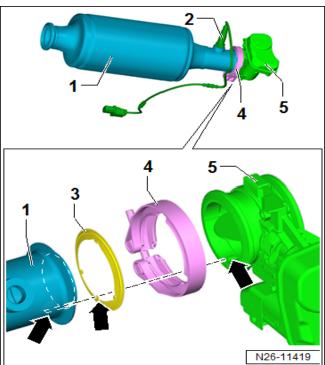
- Disconnect »brown « connector for oxygen sensor after catalytic converter -G130- <2>. Remove plug from retainer.
- Open fasteners for heat shield and pull connector <1> off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.

# i TIP

Take a photo of this area now for help with harness routing during reinstallation later.



 Loosen clamps <1 and 2> and remove NOx storage catalytic converter together with exhaust door control unit -J883-.

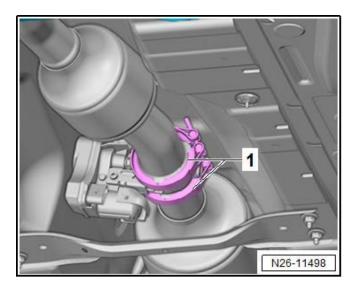


- Screw new oxygen sensor after catalytic converter -G130- <2> into new NOx storage catalytic converter <1> and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.

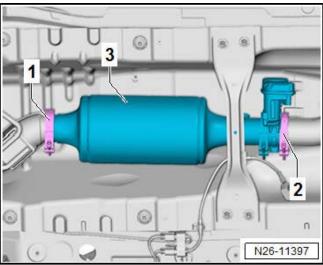
# U NOTE

Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.

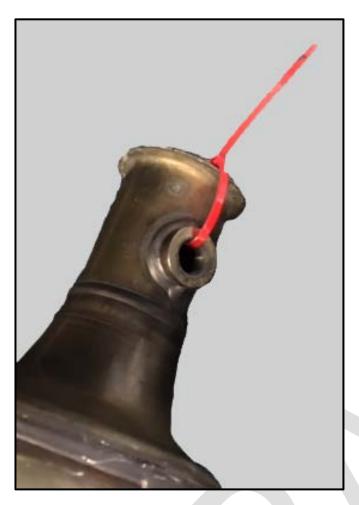


• Position all clamps <1> so that they will not collide with underbody.



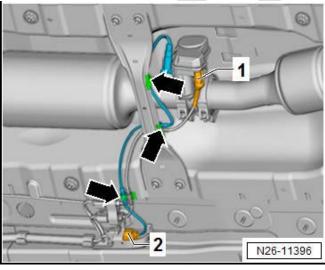
- Set clamp 1K0 253 725 B <2> in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.



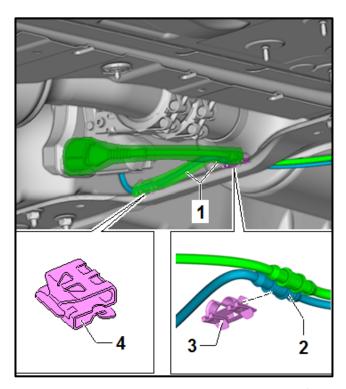


 Install the validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.

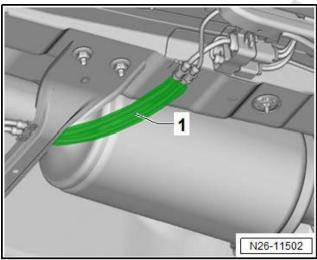




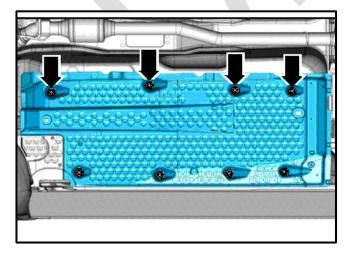
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.



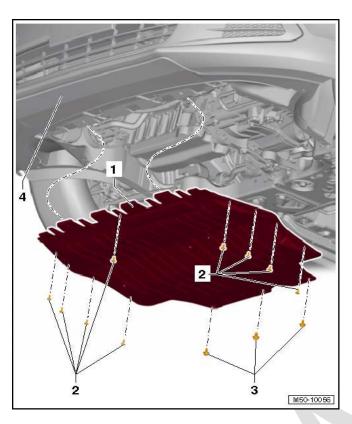
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



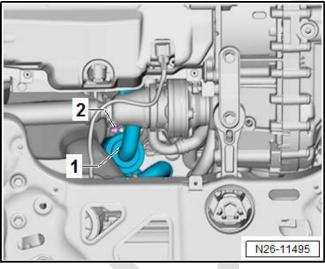
• Wrap new heat insulation mats <1> around wiring and close fasteners.



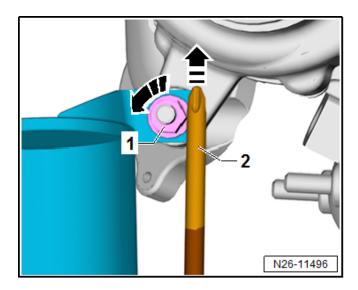
 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



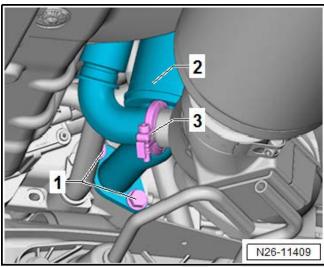
- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



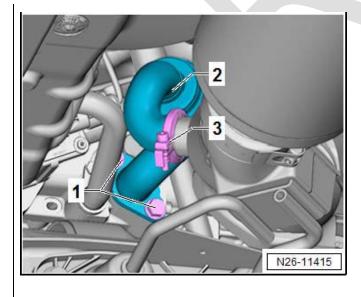
- Remove nut <2> from exhaust gas recirculation filter <1> from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



 Apply screwdriver <2> on side of nut <1> and unscrew nut while simultaneously pressing up on nut.



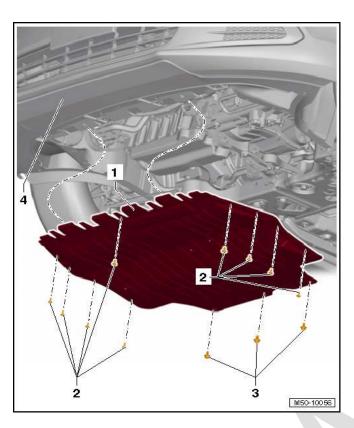
- Open clamp <3> and remove it.
- Remove bolts <1> and remove exhaust gas recirculation filter <2>.



- Set new exhaust gas recirculation filter <2> with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.

Description	Part number
EGR Filter	1K0.253.120.B
Seal	03G.131.547.H
Seal	1K0.253.115.AG
Clamp	1K0.253.725.F





- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - o Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)

**Proceed to Section F** 

### Section E – Repair Procedure (Criteria <mark>01</mark> – MY 2009 ONLY)

### i TIP

Section E addresses vehicles built with a one-piece Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in MY 2009 and ended with Start of Production (SOP) MY 2010. For vehicles built with a one-piece system, the DPF must be replaced as there is no connection on the original components.

Begin with Section D for two-piece DPF/Lean NOX trap systems.

### **WARNING**

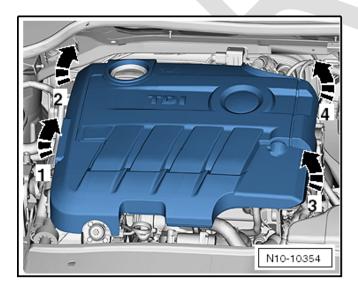
When doing any repair work, especially in the engine compartment, pay attention to the following due to the cramped conditions:

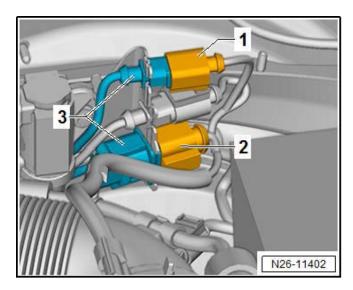
- Route all sorts of lines and electrical wiring so that they are in their original positions.
- E.g. for fuel, hydraulics, activated charcoal filter system, coolant and refrigerant, brake fluid and vacuum.
- Ensure that there is sufficient clearance to all moving or hot components.

### A CAUTION

The bracket for the engine cover on the cylinder head cover may break off if improperly removed. Always remove the engine cover panel according to the following instructions.

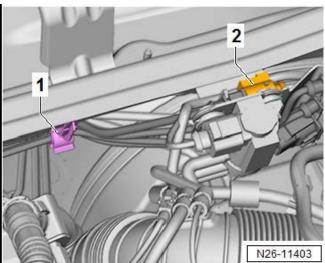
Pull engine cover up out of fastening elements near <arrows> in order shown. To do this, grip as far as possible beneath engine cover.



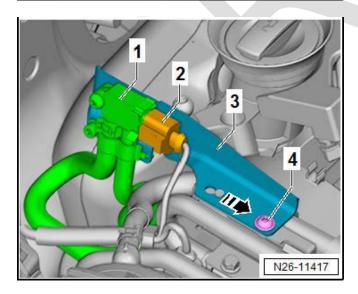


- Disconnect »orange« connector for exhaust gas temperature sender 2 -G448- <1> and »black« connector for oxygen sensor -G39- <2> on plenum chamber bulkhead.
   Remove wiring <3> from retainer and move clear.
- i TIP

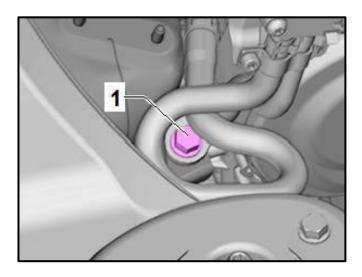
Take a photo of this area now for help with harness routing during reinstallation later.



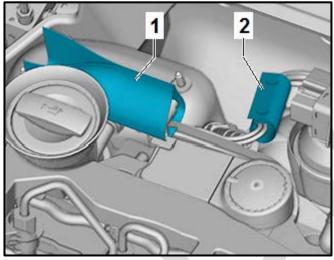
- Disconnect »brown« connector for exhaust gas temperature sender 3 -G495- <2> (secured behind bracket).
- Thread lines out of brackets <1> on plenum chamber bulkhead and on turbocharger.



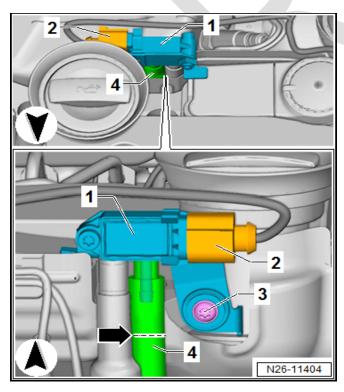
- Pull connector <2> off differential pressure sensor -G505- <1>.
- Remove securing bolt <4>, remove bracket <3> with differential pressure sender -G505- <1> in <direction of arrow> and move aside. Control lines remain connected.



 Unscrew securing bolt <1> on upper bracket for particulate filter.



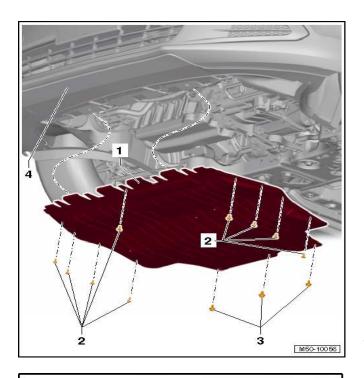
- Open fasteners on heat insulation <1> for exhaust pressure sensor 1 -G450-.
- Open heat insulation <2> for wiring and remove.



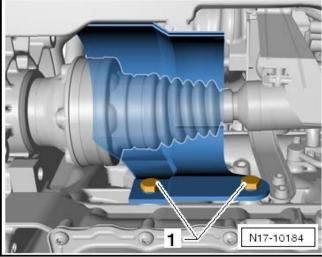
- Pull connector <2> off exhaust pressure sensor 1
   -G450- and remove securing bolt <3>.
- Cut control line <4> to exhaust gas recirculation cooler with an appropriate tool (e.g. utility knife) at the line <arrow> indicated in figure.
- Move bracket with exhaust pressure sensor 1 -G450- aside (control line to particulate filter remains connected).

# i TIP

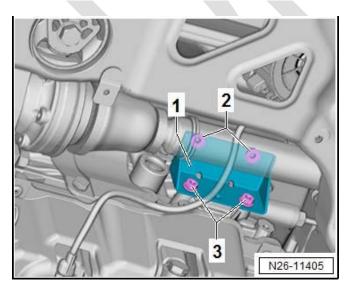
Bundle the loose harnesses with tape or similar means. Place harnesses on top of the DPF to prevent them from catching on vehicle while removing the DPF.



- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



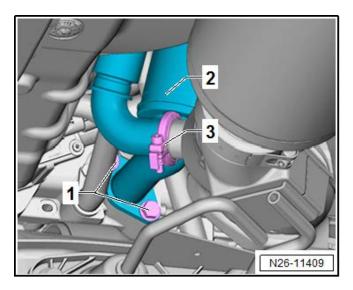
 Unscrew bolts <1> and remove heat shield for right drive shaft.



# ① NOTE

Unscrew securing nuts above bracket <2> with ratchet wrench -T10384-. In some cases, the bracket cannot be removed until the particulate filter has been detached.

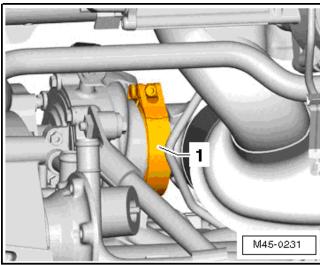
• Remove nuts <2 and 3> and remove lower bracket for particulate filter <1>.



• Open clamp <3> and remove it.

# ① NOTE

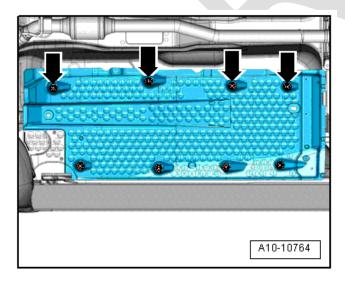
The exhaust gas recirculation filter <2> is removed after the particulate filter has been removed.



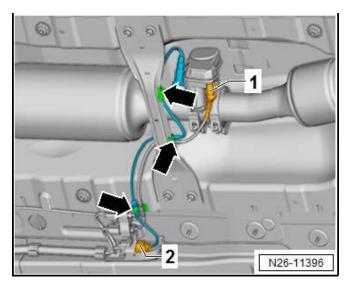
# U NOTE

Position of clamp <1> may vary. If necessary, use 5 mm bit with ball head (e.g. T10058).

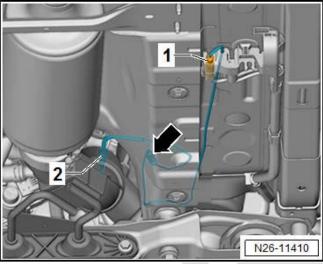
 Loosen and remove clamp <1> connecting turbocharger and particulate filter.



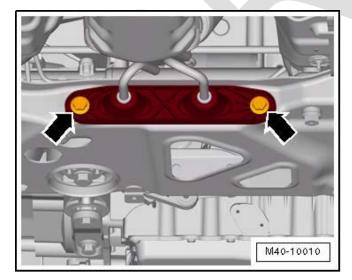
 Unscrew nuts <arrows> and pull underbody cladding on right down slightly.



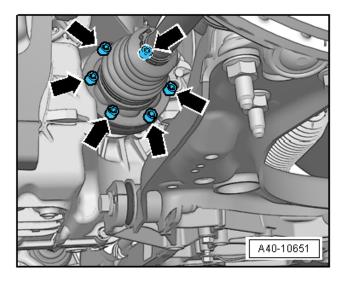
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>.
   Remove plug from retainer.
- Open fasteners on heat shield, pull connector
   <1> off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.



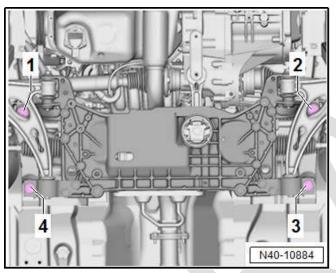
 Disconnect connector <1>. Take electrical wire from exhaust gas temperature sender 4 -G648-<2> on heat shield out of clip <arrow> and bracket and move to side.



Remove bolts <arrows> from exhaust system bracket on subframe.



 Remove bolts <arrows> and remove right drive shaft from transmission. Rest drive shaft on front axle.



• To fix the position of the subframe, the locating pins -T10096- must be screwed one at a time into positions <1, 2, 3 and 4>.

# U NOTE

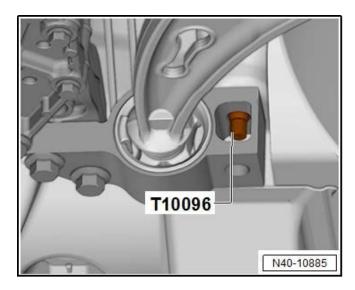
The locating pins -T10096- may be tightened only to max. 20 Nm, or the threads of the locating pins will be damaged.



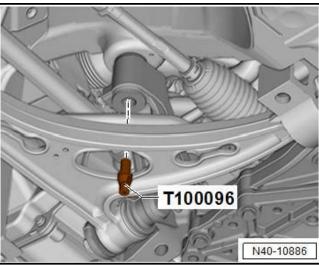
# ! NOTE

### Severe Damage RISK!

When installing the subframe locating pins -T10096-, it is possible to damage the subframe mount threads due to the normal variance in alignment. Damage to the subframe mount threads would be an extensive, body-shop repair that is not covered under this action. Only use hand tools for this process. If the locating pins bind, they should be backed out, threads cleaned and restarted.



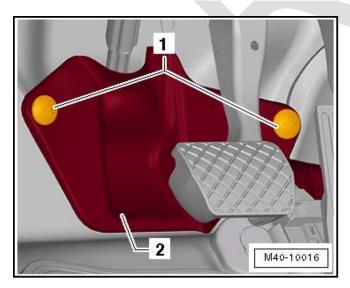
 One at a time, remove securing bolts on mounting bracket and replace them with locating pins -T10096- on both sides. Tighten locating pins to 20 Nm.



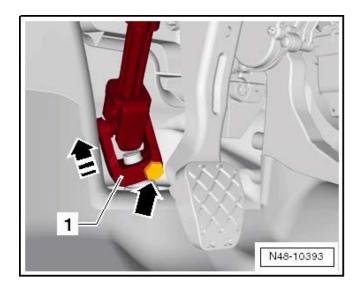
 One at a time, replace bolts in brackets with locating pins -T10096-. Tighten locating pins to 20 Nm.

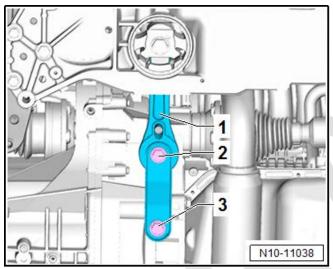


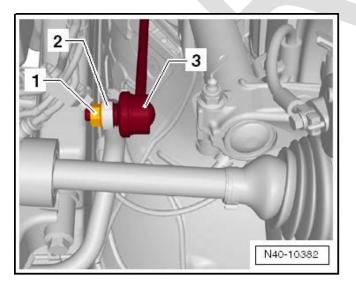
The position of the front axle is now fixed.



- Turn steering wheel to straight-ahead position and remove ignition key to engage steering wheel lock.
- If the vehicle has the keyless locking and starting system "Keyless Access", switch off ignition and open driver door to engage steering wheel lock.
- Remove bolts <1> and remove footwell trim <2>.







## **A** CAUTION

Never perform the following actions if the U-joint has been separated from the electromechanical steering mechanism:

- Switching ignition on
- Turning steering mechanism
- Turning steering column

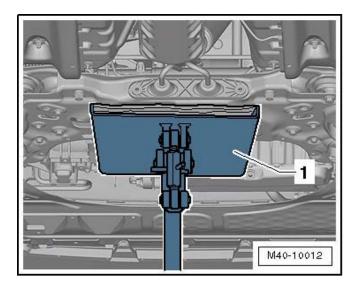
These points must always be complied with because these actions can cause irreparable damage to the clock spring or other items that is not covered under this action.

- Remove bolt <arrow> from U-joint <1> and pull off U-joint in <direction of arrow>.
- Removed bolts <2 and 3> for pendulum support <1> from gearbox.

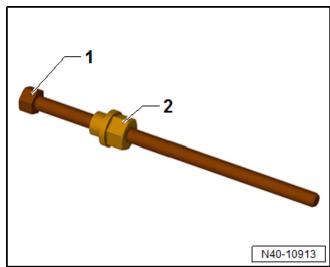
- Unscrew hexagon nut <1> on left and right from coupling rod <3>.
- Pull coupling rod <3> on the left and right out of anti-roll bar <2>.

# i TIP

Apply penetrating oil to the hexagon <1> nut to aid in removal.



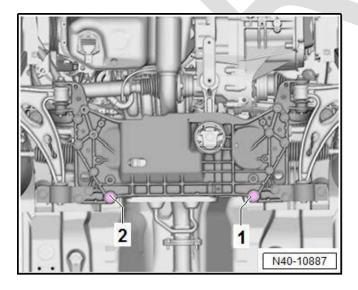
Place engine and gearbox jack -VAS 6931- <1> under subframe.



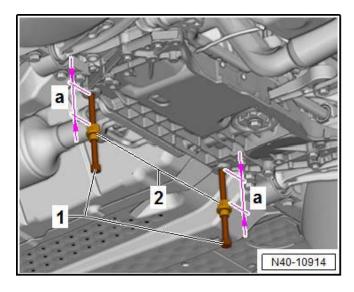
• Screw nuts 3346/3 <2> by hand as shown onto spindles 3346/2 <1> to end of thread as shown.



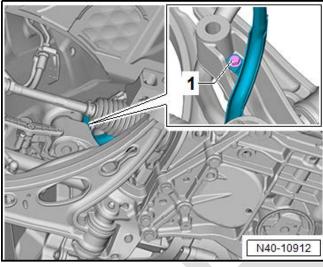
For clarity of illustration, the following steps are shown without the engine and gearbox jack.



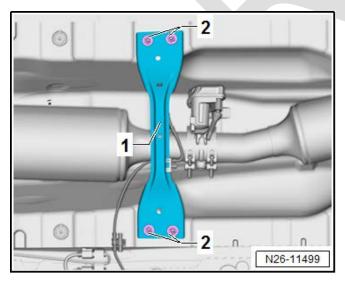
Unscrew bolts <1 and 2>.



• Screw in spindles 3346/2 by hand until distance <a> equals 90 mm.



 Lower subframe about 5cm and remove bolt <1> on the wire harness bracket for steering gear.

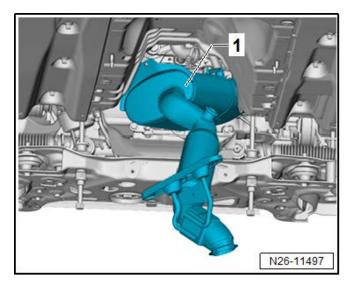


• Lower the engine and gearbox jack -VAS 6931-completely and remove it from work area.

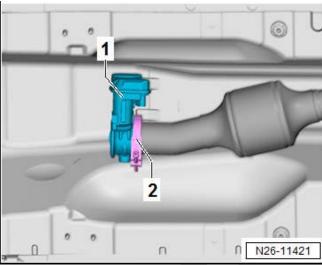
# i TIP

The subframe is now supported by spindles 3346/2.

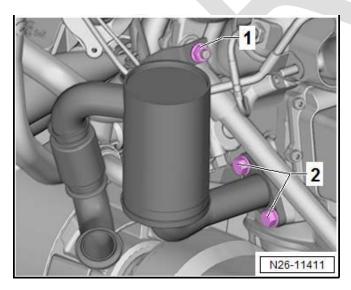
- Remove hexagon nuts <2> from front tunnel cross-piece <1> and remove tunnel cross-piece.
- Remove securing clamp between NOx storage catalytic converter and exhaust door control unit -J883-.



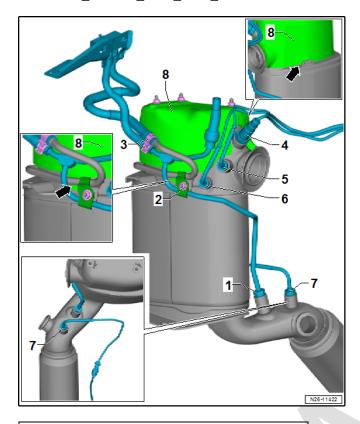
 With the help of a second technician, remove particulate filter. Do this by turning the particulate filter <1> out of center tunnel. Note electrical wiring and components when doing this.



 Open clamp <2> and remove exhaust door control unit <1>.



Remove nut <1> and bolts <2>, and remove exhaust gas recirculation filter.



# i TIP

Before the installation of the newly assembled filter, place the new and old assembly side-byside for comparison.

# Assemble particulate filter as follows before installation:

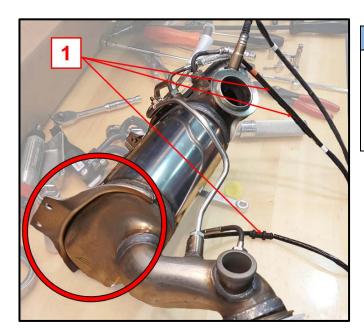
## **A** CAUTION

If transportation lock was not included among items supplied, ensure that flexible joint is fixed with transportation lock -T10404- to prevent damage to the flex pipe.

- 1 Position control line and screw in union nut hand-tight.
- 2 Position retainer for control line, screw in bolt, tighten to 9 Nm and then tighten union nut to 45 Nm.
- 3 Attach connecting hoses from differential pressure sender -G505- as shown and secure with spring clamps.
- 4 Screw in oxygen sensor -G39- and tighten to 52 Nm.
- 5 Screw in exhaust gas temperature sender 2 -G448- (connector color: orange, angled 110°) and tighten to 45 Nm.
- 6 Screw in exhaust gas temperature sender 3
   -G495- (connector color: brown) and tighten to 45
   Nm.
- 7 Screw in exhaust gas temperature sender 4
   -G648- (connector color: beige, angled 90°) and tighten to 45 Nm.
- 8 Set heat shield in position and check that it is properly seated <arrows>. Tighten nuts to 10 Nm.

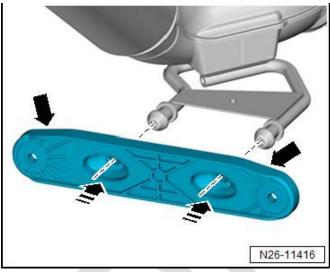
## U NOTE

When installing the exhaust gas temperature senders to the DPF, it is possible to install the sensors <1> in the wrong locations. Sensors installed in the wrong positions will not function properly. Pay attention to the sensor color coding <circle> when installing sensors into the DPF.

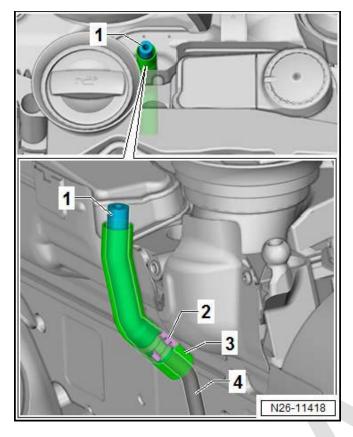


# ! NOTE

When "bench-installing" the exhaust gas temperature senders to the DPF, the edge of the lower bracket <circle> can damage the sensor wires <1> if they are allowed to get underneath the bracket while positioning the DPF. Pay special attention to the sensor wiring to prevent damage to these sensors.

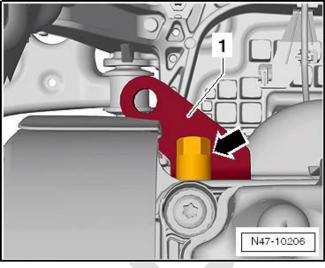


 Press bracket in <direction of arrow> onto pins of particulate filter. The bracket edge which tapers towards the ends <arrows> must face upwards.



# Renewing hose for control line exhaust pressure sensor 1 -G450-

- Remove heat shield <3>.
- Open clamp <2> and pull hose which was cut during removal <1> from control line <4>.
- Renew hose <1> and tighten clamp <2>. Push heat insulation <3> over hose and clamp.

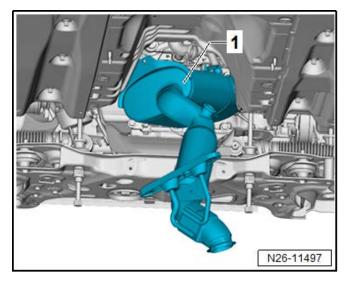


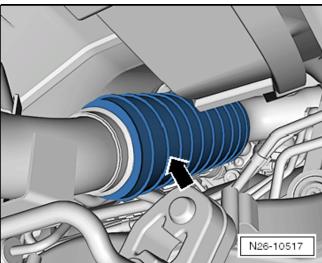
### Installing particulate filter:

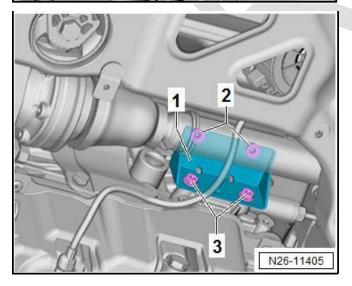
# **A** CAUTION

Danger of damaging flexible joint between particulate filter and NOx storage catalytic converter. When removing and installing:

- Do not bend flexible joint more than 10°.
- Install flexible joint free of tension.
- Take care not to damage wire mesh on flexible ioint.
- The flexible joint must be secured with transportation lock -T10404- to prevent overstretching.
- Always hold the particulate filter by the heavy casing when transporting or handling it.
  - Loosen nut <arrow> for bracket <1> on top of cylinder head a few turns.





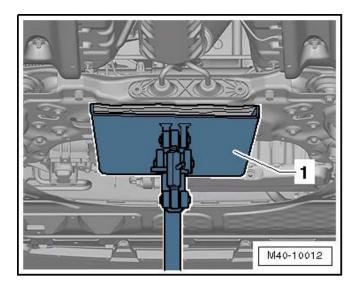


- Secure electrical wiring of both upper exhaust gas temperature senders (connector colors brown and orange), the heated oxygen sensor and differential pressure sensor -G505- with tape to the top of the heat shield on the particulate filter.
- Position new clamp 1K0 253 725 over the intake funnel of the particulate filter. Orient new clamp (positioned downward) to the same clocking as the original clamp.
- Move particle filter into installation position by »turning« it into center tunnel. Take care not to damage electrical wiring or components.
- Ensure that the transportation lock -T10404-<arrow> is properly seated.

# ! NOTE

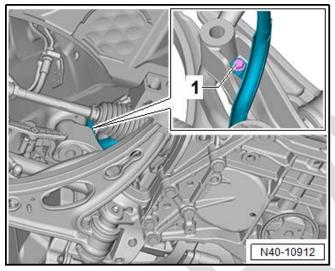
Unlike the production bracket, the supplied bracket no longer has threaded studs. It must be screwed to the particulate filter using the supplied bolts, and the nuts must be screwed on from below. The ball indentation on the bracket faces the crankcase.

- Hold bracket in place and start new bolts for nuts
   in bracket from above.
- Start nuts <3 and 2> by hand a few full turns.

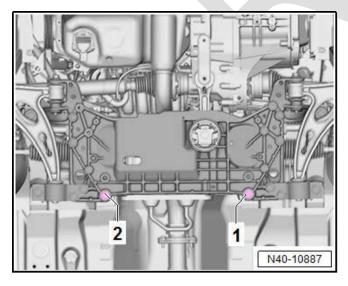


### Installing subframe:

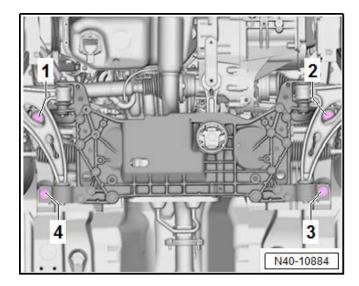
 Position engine and gearbox jack -VAS 6931under subframe.



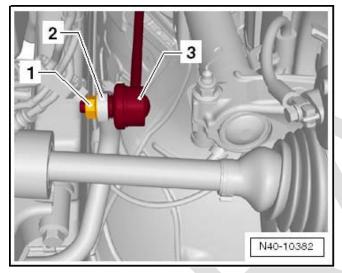
- Raise subframe about 5 cm, screw in bolt <1> and tighten to 3 Nm.
- Carefully raise subframe to installation position taking locating pins into consideration.



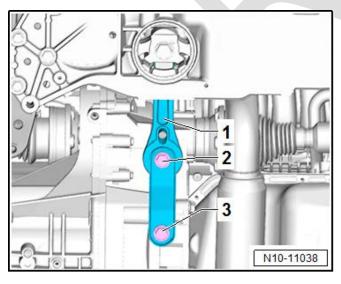
 Remove spindles 3346/2, screw in new bolts (M12 x 110 mm) at positions <1 and 2>, tighten to 50 Nm and turn an additional 120°.



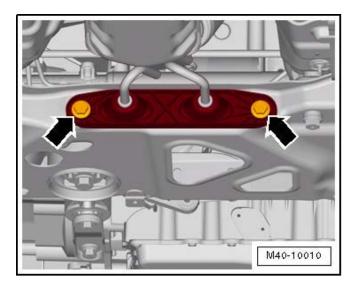
- Remove locating pins one at a time and replace them with new bolts (M12 x 90 mm).
- Tighten bolts to 70 Nm, then tighten them and 180°.
- Take load off engine and gearbox jack
   -VAS 6931- and remove it from work area.



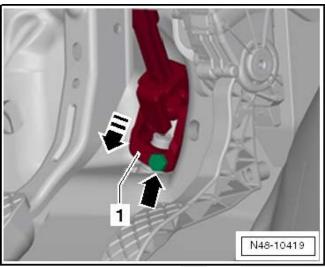
 Guide coupling rods <3> on left and right into anti-roll bar, screw on new hexagon nuts <1> and tighten to 65 Nm.



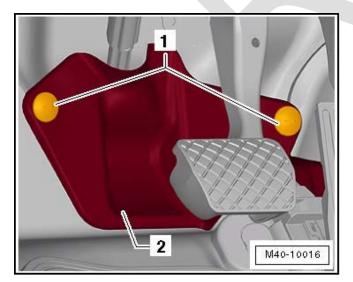
 Screw in new bolts <2 and 3> for pendulum support <1>, tighten them to 50 Nm and then tighten and additional 180°.



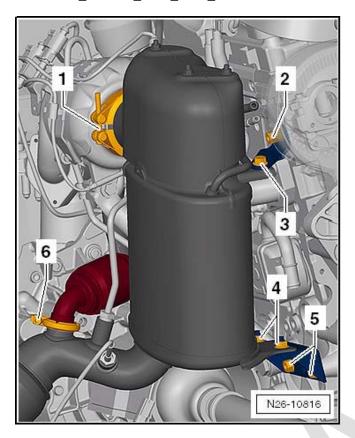
• Screw new bolts <arrows> loosely into exhaust system bracket on subframe.

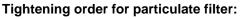


 Fit U-joint in <direction of arrow>, screw in new bolt <arrow> for U-joint <1> and tighten to 30 Nm.



Position footwell trim <2> and hand-tighten bolts <1>.





# U NOTE

Due to restricted space, the nut <2> cannot be reached with a torque wrench. Use a commercially available 13 mm combination wrench with a 15° offset and a total length of 140 mm.

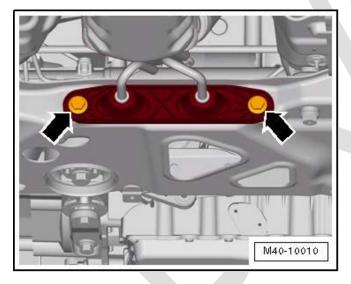
1	Position particulate filter with new seal on turbocharger and secure clamp <1> loosely.		
2	Screw in bolts <2 to 5> loosely by hand.		
	Particulate filter and retainer must be able to move		
		Γ =	
3	Tighten clamp <1>	7 Nm	
4	Tighten nuts <5>	23 Nm	
5	Tighten nuts <4>	23 Nm	
6	Tighten nut <2>	23 Nm	
7	Tighten nut <3>	23 Nm	

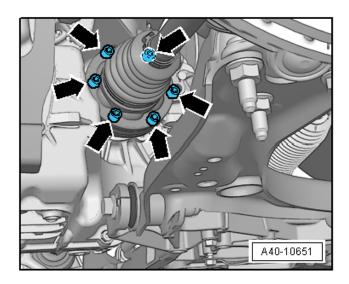
# • NOTE

# **RISK of Exhaust Leak!**

Tightening sequence must be followed. Clamp <6> is installed when the exhaust gas recirculation filter is installed.

- Tighten bolts <arrows> securing exhaust system bracket to subframe to 23 Nm.
- Remove transport and protective packaging from flexible joint for particulate filter.

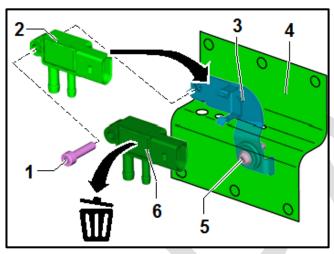




# ① NOTE

The lengths of the driveshaft/gearbox connecting bolts differ depending on gearbox:

- Manual gearbox = M10x52 mm (N.909.911.02)
- Dual clutch gearbox (DSG) = M10x23 mm (N.909.910.02)
  - Position right drive shaft and screw in new bolts <arrows>. Tighten bolts initially to 10 Nm, then tighten further to 70 Nm.

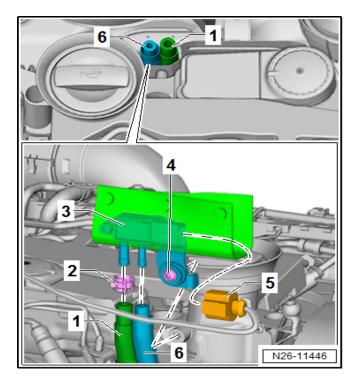


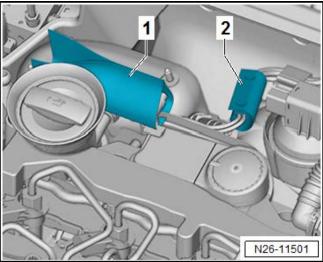
### Installing exhaust pressure sensor 1 -G450-

# ! NOTE

For greater clarity, exhaust pressure sensor 1 -G450is shown here from behind (perspective of plenum chamber bulkhead).

- 1 Remove bolt <1>.
- 2 Remove and dispose of old pressure sensor <6>.
- 3 Insert new pressure sensor <2> into bracket
   <3>
- 4 Screw in bolt <1> and tighten to 10 Nm.
- 5 Guide bracket with pressure sensor through openings in new heat shield <4>.



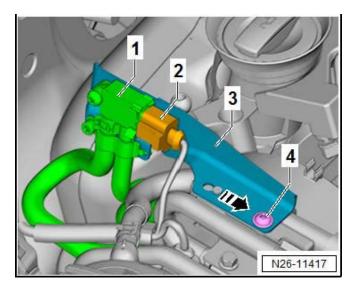


# () NOTE

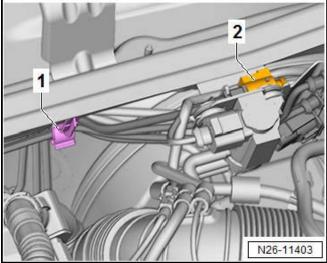
Take care to connect the hoses <6> (thin) and <1> (thick) correctly.

- Guide exhaust pressure sensor 1 -G450- <3> into open ends of hoses as shown and secure thicker hose <1> with new clamp <2>.
- Screw in bolt <4>, tighten to 2 Nm and connect connecter <5>.

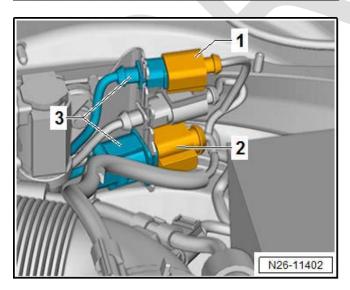
- Close fasteners on heat insulation mat <1> around exhaust pressure sensor 1 -G450-.
- Wrap new heat insulation mat <2> around wiring and close fasteners.



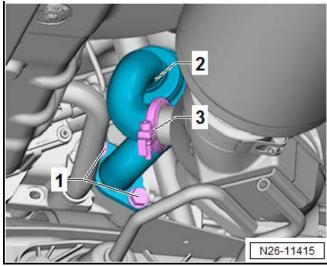
- Position bracket <3> with differential pressure sender -G505- <1> opposite -direction of arrow-, screw in new securing bolt <4> until head makes contact and tighten to 4 Nm.
- Push connector <2> onto differential pressure sensor -G505- <1>.

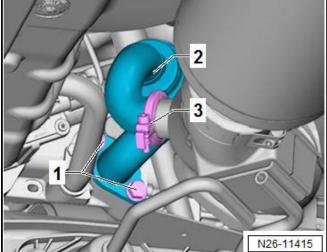


- Connect »brown« connector for exhaust gas temperature sender 3 -G495- <2> and secure behind bracket.
- Thread lines into brackets <1> on plenum chamber bulkhead and on turbocharger.



 Connect »orange« connector for exhaust gas temperature sender 2 -G448- <1> and »black« connector for heated oxygen sensor -G39- <3> on plenum chamber bulkhead and secure wiring <3> in retainer.

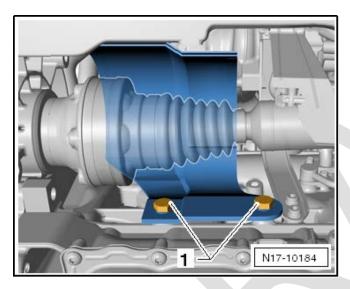




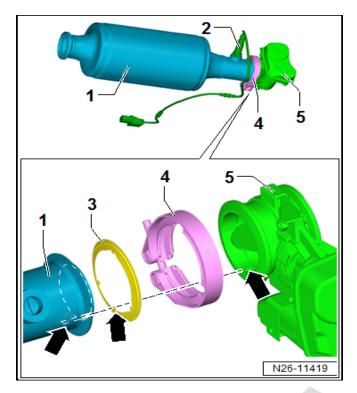
#### Installing exhaust gas recirculation filter:

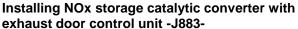
- Set exhaust gas recirculation filter with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.





Position heat shield for right drive shaft, screw in bolts <1> and tighten to 25 Nm.



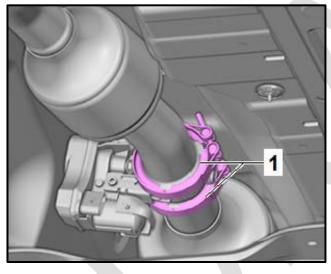


Screw oxygen sensor after catalytic converter
 -G130- <2> into NOx storage catalytic converter
 <1> and tighten to 52 Nm.

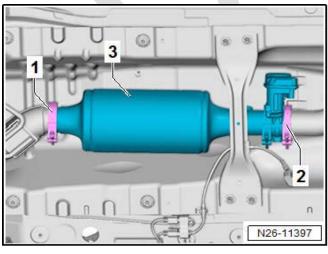
# U NOTE

The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.
- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm

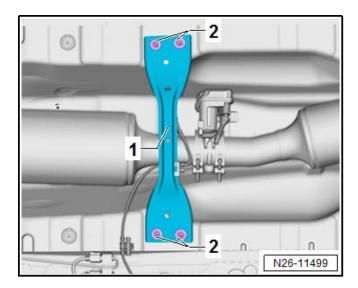


- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps <1> so that they will not collide with underbody.

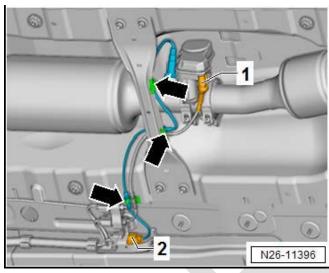


- Set clamp 1K0 253 725 B <2> in place and engage. Then tighten to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.

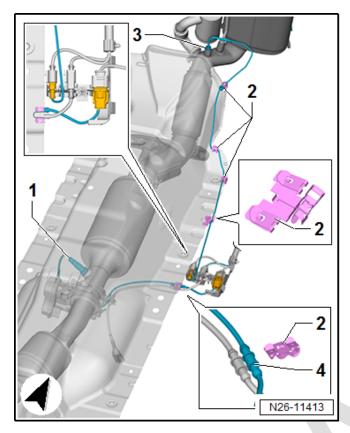




• Set front tunnel cross-piece <1> in place, screw on hexagon nut <2> and tighten to 20 Nm.

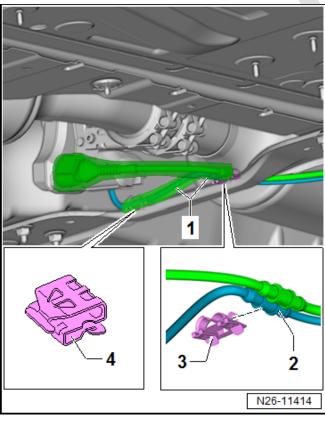


- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.

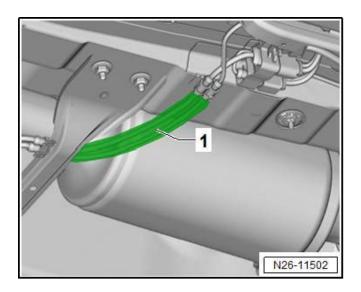


#### Routing electrical wiring on underbody:

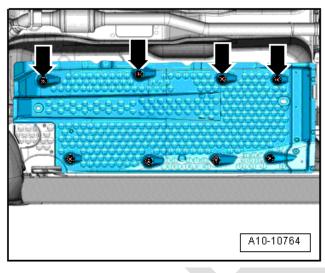
 Place electrical wiring from oxygen sensor after catalytic converter -G130- <1> and exhaust gas temperature sender 4 -G648- <3> in clips <2> on heat shield as shown. Connect connector and secure in bracket.



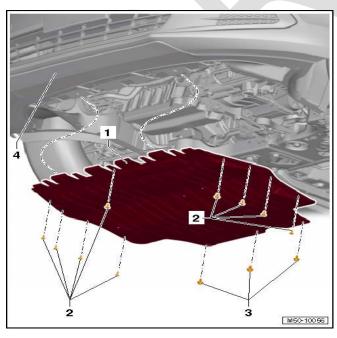
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



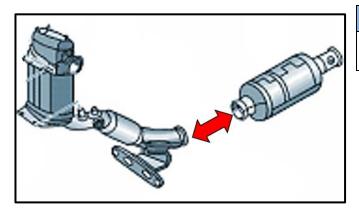
• Wrap new heat insulation mat <1> around wiring and close fasteners.



 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - o Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)



# ① NOTE

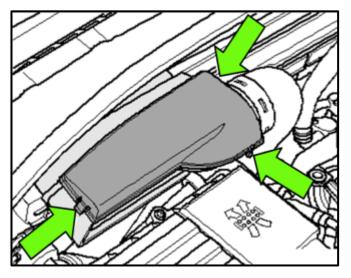
On one-piece DPF with NOx trap system (MY 2009 cars), the NOx trap must be separated from the DPF.

• Separate NOx trap from DPF using VAS6254 Chain Pipe Cutter (or equivalent).



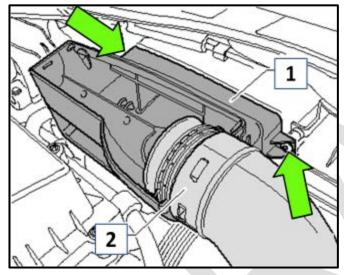
 Install the validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.



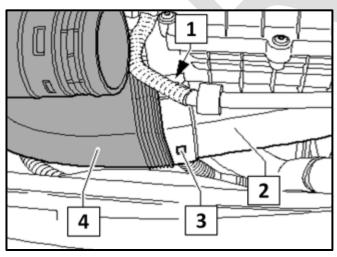


# MY 2009 ONLY - Inspect/Replace Glow Plug Control Module:

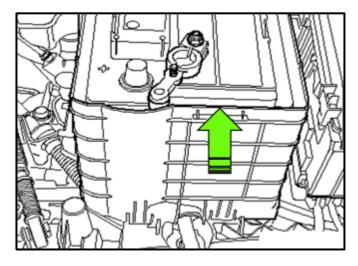
- Switch ignition off and remove key
- Open hood.
- Carefully remove engine cover.
- Release the tabs <arrows> and remove the cover on the air intake.



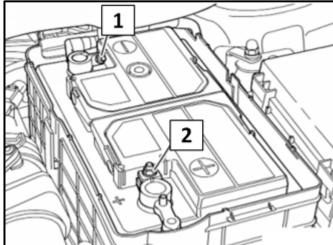
• Remove the screws <arrows> for the air intake guide <1> and pull the guide hose <2> out of the air intake guide <1>.



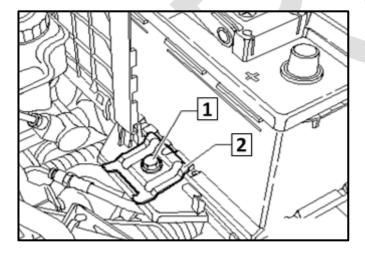
 Press the tabs <1 and 3> and remove the air guide hose <4> from the lower air filter housing <2>.



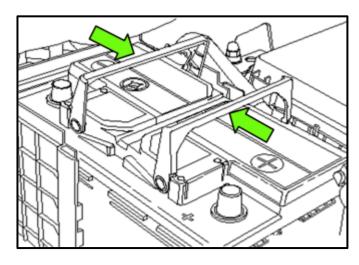
• Remove the battery cover in the direction of <arrow>.



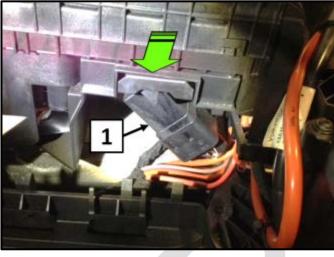
- Disconnect and isolate the ground cable <1> from the battery negative pole.
- Disconnect the positive cable <2> from the battery positive pole.



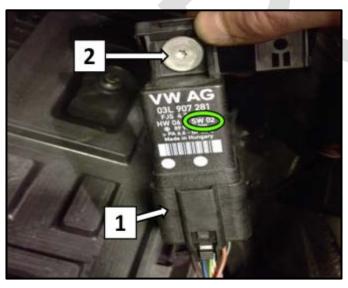
Remove the bolt <1> and then remove the clamping plate <2>.



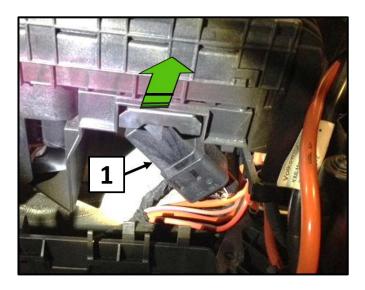
• Fold up the handles <arrows> and remove the battery.



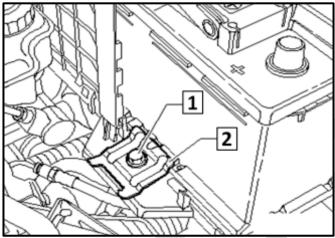
 To remove, slide the glow plug control module with bracket <1> outward from underneath the left engine compartment E-box in <direction of arrow>.



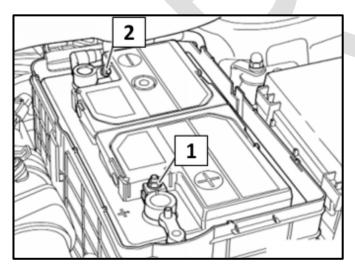
- Inspect the software version of the glow plug control module <circle>.
  - If the software version <circle> is "SW 02,"
     DO NOT REPLACE the glow plug control module.
  - If the software version <circle> is not "SW 02," REPLACE the glow plug control module with part number (03L 907 281).
- If replacing the glow plug control module, disconnect electrical connector <1>, remove screw with bracket <2> and reinstall onto new glow plug control module.



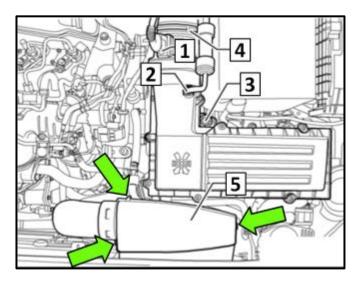
 To install, slide glow plug control module <1> into position underneath left engine compartment Ebox <in direction of arrow>.



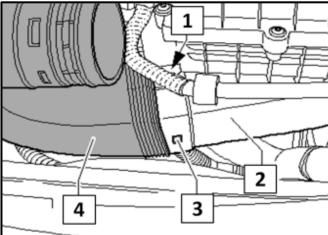
- Reinstall battery.
- Reinstall the clamping plate <2> with bolt <1> and torque to 20Nm.



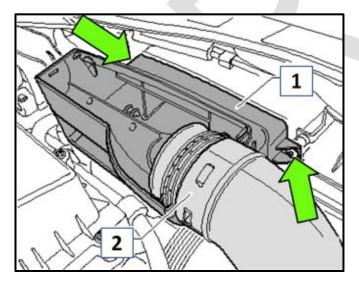
- First, reconnect positive cable to positive terminal on battery and torque screw <1> to 6Nm.
- Second, reconnect negative cable to negative terminal on battery and torque screw <2> to 6Nm.
- Reinstall battery cover



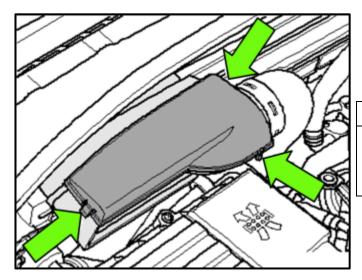
- · Reinstall the air filter housing
- Tighten the bolt <3> for the lower air filter housing.
- Reinstall the intake tube and close the clamp <4>.
- Reconnect the Mass Airflow Sensor -G70connector <1> and the vacuum line <2>.



 Reinstall the air guide hose <4> onto the lower air filter housing <2>.



Reinstall the air intake guide <1> and air intake guide hose <2>, then tighten the screws <arrows>.



- Reinstall the cover on the air intake and secure tabs <arrows>.
- Reinstall engine cover.
- Switch on ignition

# i TIP

The ASR/ESP Control Lamp –K155– will light up continuously until the vehicle is driven 15 to 20km/h. This will activate the Steering Angle Sensor –G85–.

- Connect Diagnostic Tester and clear faults.
- Disconnect Diagnostic Tester.
- Check and reset the clock.
- Completely open/close all power windows and set pinch protection.
- Perform function test of all electrical consumers.

**Proceed to Section F** 

#### Section F – Software Version Management (All Criteria)

## • NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- √ The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to
    do so may cause the update to fail, which could result in damage to the control module. Control
    modules damaged by insufficient voltage will not be covered.
- √ The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- √ The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- ✓ If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.

## ① NOTE

#### Using Bluetooth for this action is PROHIBITED!

Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

- Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
   It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

#### **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

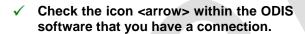
## i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions*.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

# Things to check before starting Software Version Management (SVM):

√ Verify your network connection <arrow>
either thru LAN or WIFI by checking the
connection icon (lower right of the home
screen).

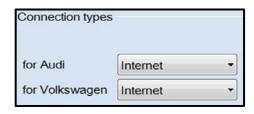


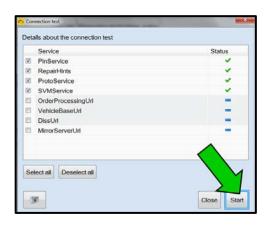
✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

















- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150C Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.

# U NOTE



All TDI flashes <u>MUST</u> be completed during a single, standalone ODIS Diagnostic Session. You <u>MUST</u> fully complete this campaign and send all GFF Paperless logs before beginning any other campaigns or operations. You <u>MUST</u> also conclude any other campaigns or operations that have been started and end the corresponding diagnostic session and send all GFF Paperless logs before beginning this operation. Failure to independently separate the ODIS diagnostic session for this campaign will cause problems updating the FAZIT server in Germany and will delay if not negate the payment of the emissions modification.

#### **IMPORTANT!**

If there are any ODIS "Hot-Fix" patches installed, they <u>MUST</u> be removed from the scan tool before beginning this operation. ODIS "Hot-Fix" patches may affect the flash process.

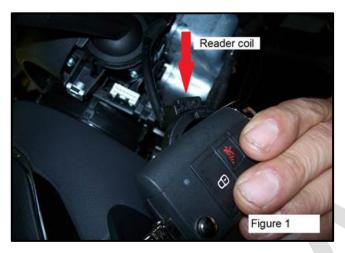
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.



# U NOTE

For the duration of the flash, the following is required to keep the BUS system active during the flash process:

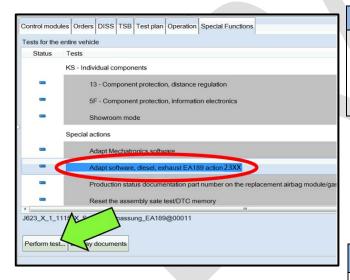
- Driver side door open
- Doors unlocked
- Hazzard flashers in the "On" position



## • NOTE

#### **KESSY Vehicles!**

It is **REQUIRED** to remove the reader coil cap and insert the key into the reader coil (if applicable), or place the key in the closest proximity possible to the reader coil throughout the flash process. If loss of communication between the reader coil and the key occurs during the flash, it may damage a control module. If the vehicle does not have a reader coil that the key can be placed into, you may secure the key in close proximity to the coil reader using a residue-free adhesive or tape, an elastic cloth or stretch bandage, or other improvised retaining device.



## • NOTE

#### RISK of Scan Tool Damage!

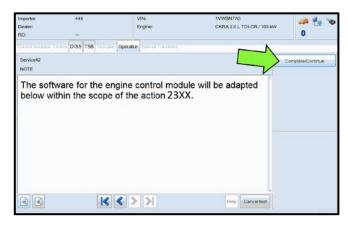
Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- Once the GFF scan is complete, select "Special functions".
- Select the test plan "Adapt software, diesel, exhaust EA189 action 23XX" <as shown>.
- Select "Perform test" <arrow>.

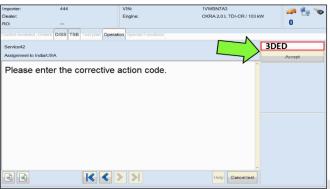
## ① NOTE

#### RISK of Improper Repair!

- DO NOT SELECT the normal test plan for "Adapting Software".
- ONLY SELECT the test plan "Adapt software, diesel, exhaust EA189 action 23XX" to perform this repair.



• Select "Complete/Continue" <arrow>.

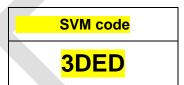




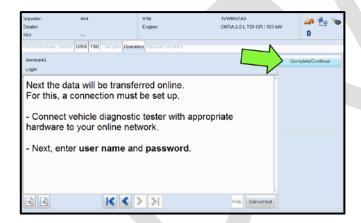
#### Using Bluetooth for this action is PROHIBITED!

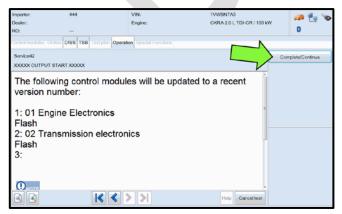
Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

• Enter the corrective action code (SVM code) as listed below.

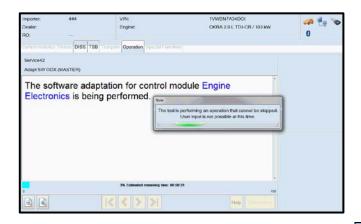


- Select "Accept" <arrow>.
- Select "Complete/Continue" <arrow>.





Select "Complete/Continue" <arrow>.



 Observe flash process and follow any on-screen prompts to complete the test plan.

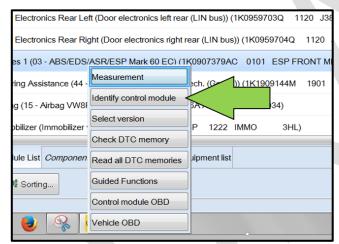


# • NOTE

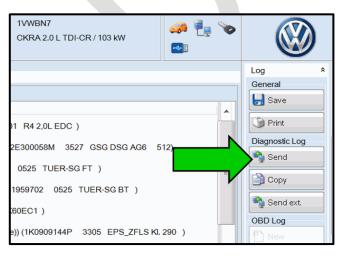
#### In the event of a Flash Malfunction!

In the event of a flash error or malfunction, **STOP**. **DO NOT** exit the ODIS session, disconnect the scan tool, attempt the flash again, or continue further in the test plan.

Create a VTA ticket and allow the VW Technicians Helpline to provide direction with flash failures.



- After the software update is completed and before sending the GFF Log Online:
  - Select the "Control Module" tab.
  - Scroll down and right click on Address Word 0001/ Engine Control Module.
  - Select "Identify Control Module" <arrow>.



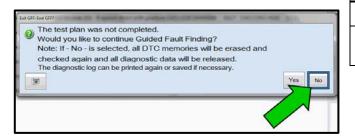
 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

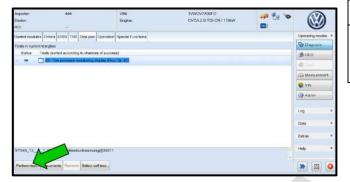


#### RISK of Non-payment!

 Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.

Verify that no other Campaigns or operations are performed during this ODIS diagnostic session before sending the log, and verify that the Engine Control Module has been re-identified.







Technicians may find it helpful to also store the log on a USB stick for back-up.



When exiting GFF, it is important to select "No" <arrow>.



It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

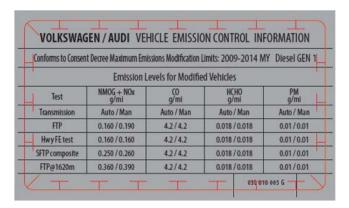
- If TPMS light illuminates, follow test plan "03 – Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- End the diagnostic session fully, exit the scan tool, and disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform test drive.

# U NOTE

<u>DO NOT drive</u> vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

#### **Proceed to Section G**

Section G – Supplemental Vehicle Emissions Control Information Label



03L 010 005 G

# Jetta



# Install Supplemental Vehicle Emissions Control Information Label

#### i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.

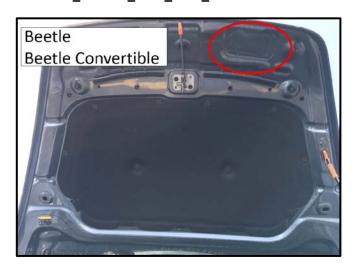


- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 G, in the location shown <circle>.

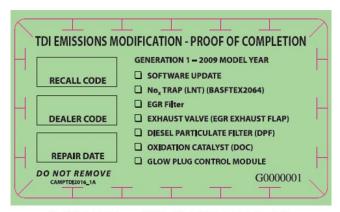
#### **Proceed to Section H**



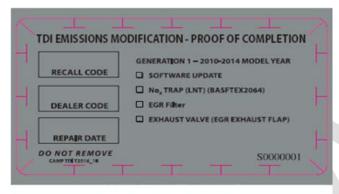
FOIA\_EPAHQ\_2018\_4439\_000311



#### Section H - Campaign Completion Label



MY 2009 – CAMP TDI 2016\_1A



MY 2010-2014 - CAMP TDI 2016 1B

#### **Install Campaign Completion Label**

## i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Completion Label is to be installed.
- Fill out and install the TDI Emissions Modification
   Proof of Completion Label, part number:
  - o MY 2009 vehicles: CAMP TDI 2016\_1A
  - MY 2010-2014 vehicles: CAMP TDI 2016\_1B

# . NOTE

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided)
- Close the hood.



Proceed to Section I (California only).

Proceed to Section J (All without California).

#### Section I – California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

## i TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV *only upon request*.

#### Proceed to Section J

#### Section J – Service Modification Documentation Requirements



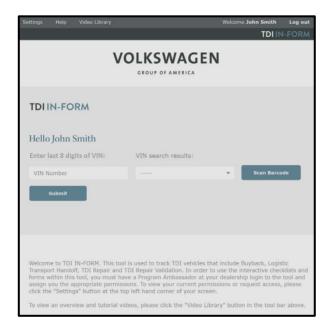
#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

#### i TIP

To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

• Enter the "TDI IN-FORM" tool <arrow>.



 Enter the VIN for the vehicle that requires documentation.

## i TIP

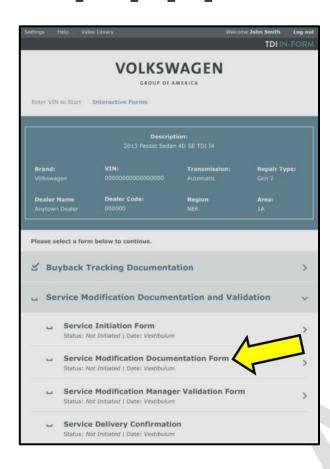
The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.

## i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.



- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.



#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

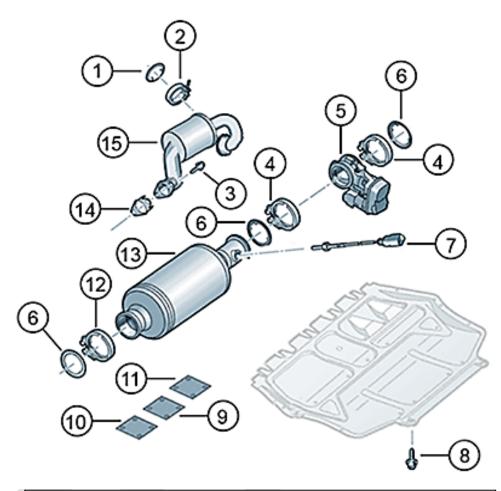
#### ALL WORK IS COMPLETE



At this time, refer to the ELSA and address any additional open campaigns/recalls.

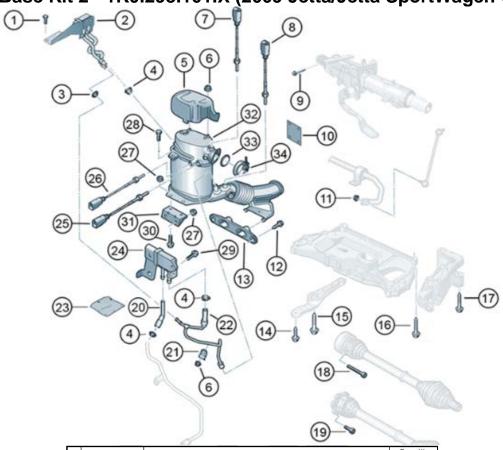
# Appendix A – Parts Kits Identification and Details

# 2.0L Base Kit 1 - 1K0.298.101.A (All MY Vehicles)



#	Part	Name	Quantity Required Per Vehicle
1	1K0253115AG	Seal	1
2	1K0253725F	Clamp	1
3	N10642103	Bolt (M8x25)	2
4	1K0253725B	Clamp (narrow)	2
5	1K0253691J	Exhaust door control unit -J883-	1
6	1K0253115AE	Seal	3
7	03L906262N	Oxygen sensor after catalytic converter -G130-	1
8	1K0825951	Bolt self-locking (M6x20)	3
8	WHT000729A	Bolt self-locking (M8x20)	3
9	1K0971461D	Heat shield (Cable for Exhaust door control unit –J883-)	1
10	1K0971461E	Heat shield (Cable for Oxygen sensor –G130-)	1
11	1K0971461F	Heat shield (Cable for Oxygen sensor and Exhaust door control unit)	1
12	1K0253725	Clamp	1
13	1K0254402AX	NOx storage catalytic converter	1
14	03G131547H	Seal	1
15	1K0253120B	Exhaust gas recirculation filter	1

# 2.0L Base Kit 2 - 1K0.298.101.X (2009 Jetta/Jetta SportWagen Only)



#	Part	Name	Quantity Required Per Vehicle
1	N90737105	Bolt	1
2	1K0131552B	Differential pressure sender -G505-	1
3	3C0131483A	Spring clamp	3
4	4B0422379	Spring clamp	1
5	5N0131783	Heat shield	1
6	N02300215	Nut M6	4
7	03L906262B	Oxygen sensor -G39-	1
8	03L906088EG	Exhaust gas temperature sender –G648-	1
9	N01033513	Bolt for U-joint	1
10	5N0971461	Heat shield	1
11	N0150816	Nut	2
12	N10240003	Bolt (M8x32)	2
13	1K0253144BC	Exhaust system bracket	1
14	N91066101	Bolt (M10x35)	1
15	N91167101	Bolt (M10x75)	1
16	WHT000431A	Bolt M12x110	2
17	N91039802	Bolt M12x90	4
18	N90991102	Bolt (M10x52) - Manual Transmission	6
19	N90991002	Bolt (M10x23) - DSG Transmission	6
20	03G131525	Hose for control line	1
21	1K0131649	Retainer	
22	1K0131552A	Control line	1
23	1K0971461C	Heat shield	1
24	076906051A	Exhaust pressure sensor 1 -G450-	1
25	03L906088T	Exhaust gas temperature sender – G448-	1
26	03L906088J	Exhaust gas temperature sender – G495	1
27	N01508315	Nut M8	4
28	N10653102	Bolt	1
29	N10456201	Bolt M6x25	1
30	N90786502	Bolt	2
31	1K0253463AF	Bracket	1
32	1K0254708GX	Particulate filter	1
33	04L253115A	Seal	1
34	1K0253725	Clamp	1





# **Content**

Summary of relevant Appendix B paragraphs

Repair Instructions Volkswagen

**Repair Instructions Audi** 





# **Repair instructions Audi**

Attached document changed compared to submission on Januray 25th, 2017 Updates highlighted yellow



# **Emissions Recall**

**Code: 23U7** 

# **CONFIDENTIAL DRAFT 05/23/2017**

Subject

2.0L TDI Engine (GEN 1) Emissions Control Software - TDI Vehicles USA ONLY

**Release Date** 

Month XX, 2017

**Affected Vehicles** 

U.S.A.: 2010-2013 MY Audi A3 2.0L TDI

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Audi A3 vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system software, install a TDI Emissions Modification – Proof of Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Audi may not be able to perform the emissions modification until the customer corrects such modification.

#### **Code Visibility**

On or about Month XX, 2017, this campaign code will show open on affected vehicles in Elsa.

On or about Month XX, 2017, affected vehicles will be identified with this campaign code in the VIN Lookup tool at <a href="https://www.audiusa.com">www.audiusa.com</a>.

#### **Owner Notification**

Owner notification will take place in Month 2017.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.accessaudi.com">www.accessaudi.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order.

If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit the request through Audi Warranty Online under the <u>Campaigns/Update</u> option.

Service Number	23U7		
Damage Code	0099		
Parts Vendor Code	002		
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90		
Vehicle Wash/Loaner	Do not claim wash/loaner under this action		
Criteria I.D.	8V		
	Install <u>Base Kit I components</u> , install NOx catalyst, perform softwinstall a supplemental Vehicle Emissions Control Information label at Modification Label.  Labor operation: 2360 23 99 270 T.U.		
	Part number	Description	Quantity
	1K0 298 101 A	Base Kit I	1
	1K0 254 402 AX	NOx Catalyst	1
*Additional shipments will be released based on the volume of comprepairs claimed through SAGA. The parts will not be available for ord the website at this time.			

#### **Campaign Work Procedure**

23U7 Emissions Recall



#### NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

#### **Required Parts**

Quantity	Part Number	Part Description
1	1K0.298.101.A	Base Kit I
1	1K0 254 402 AX	NOx Catalyst
1	03L 010 005 G	Supplemental Vehicle Emissions Control Information Label
1	CAMPTDI 2016_1B	TDI Emissions Modification – Proof of Completion Label

Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

#### Required Tools



- VAS6150X Diagnostic Tester (or equivalent)
- VAS5054X Remote Diagnosis Head (or equivalent)



GRX3000VAS - Battery Tester/Charger



Socket 22mm –T10491–



• Torque wrench -V.A.G 1331- (or equivalent)



• Torque wrench -V.A.G 1332- (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com



This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.



#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

#### **Emissions Modification Instruction**

#### Section A - Check for Previous Emissions Modification

i TIP

23J9

2011-10-04

If the TDI Emissions Modification – Proof of Completion Label (CAMPTDI 2016\_1B) is present, no further work is required.



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

(i) TIP

On the date of modification, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>. If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.
- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

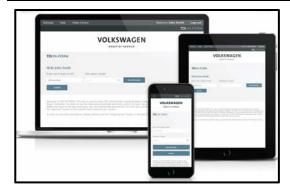
arrow above>.

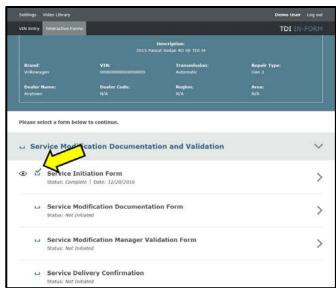
customer.

Proceed to Section B.

#### Section B - Emissions Modification Procedure

Example







#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

#### NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - o If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate Service Modification Documentation Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

Proceed to Section C

#### Section C - Check for Pre-existing MIL ON Conditions and Vehicle Modifications



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, obtain GFF diagnostic log, create an ATA ticket and contact the Audi Technicians Helpline.
  - o If MIL is not illuminated, continue work procedure.



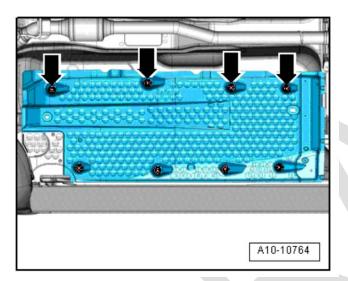
 ATA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.



- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components are found, STOP, create an ATA ticket and contact the Audi Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue work procedure.

**Proceed to Section D** 

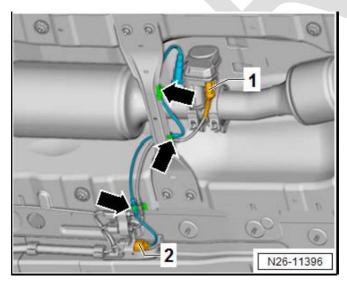
#### Section D - Repair Procedure Kit Installation



- Open hood.
- Raise vehicle on hoist.
- Unscrew nuts <arrows> and pull underbody cladding down slightly.



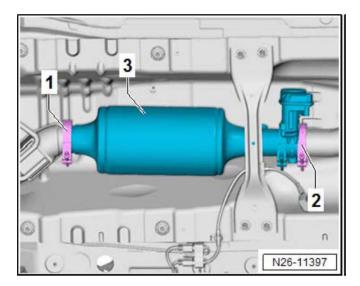
A wedge could be placed between vehicle body and cladding to allow more work space.



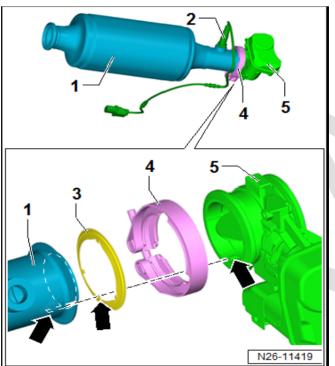
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>.
   Remove plug from retainer.
- Open fasteners for heat shield and pull connector
   off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.



Take a photo of this area now for help with harness routing during reinstallation later.



 Loosen clamps <1 and 2> and remove NOx storage catalytic converter together with exhaust door control unit -J883-.

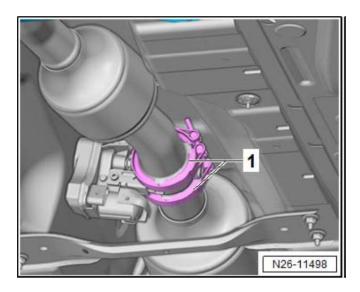


- Screw new oxygen sensor after catalytic converter -G130- <2> into new NOx storage catalytic converter <1> and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches -arrows-.

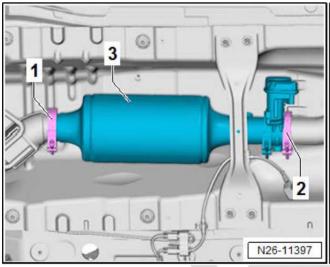
## ① NOTE

Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

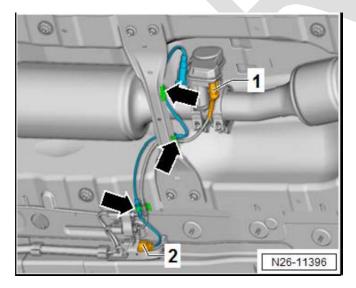
- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.



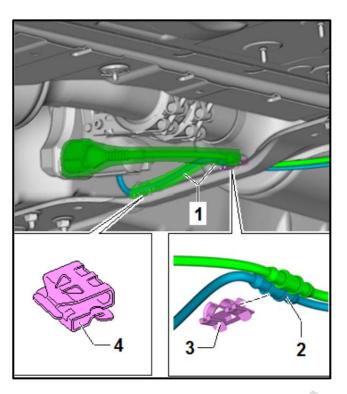
• Position all clamps <1> so that they will not collide with underbody.



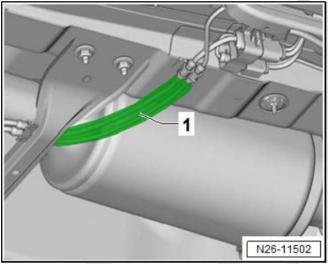
- Set clamp 1K0 253 725 B <2> in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.



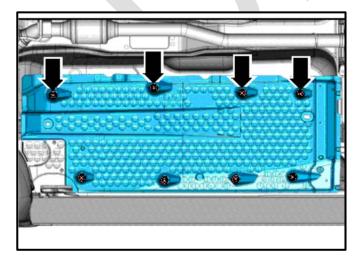
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.



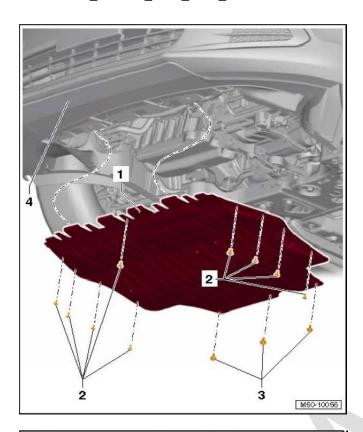
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



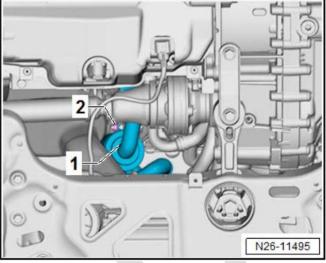
 Wrap new heat insulation mats <1> around wiring and close fasteners.



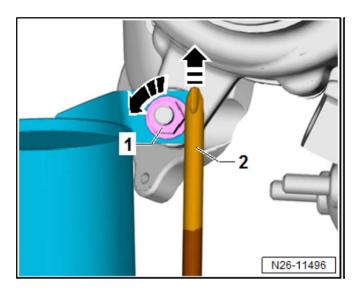
 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



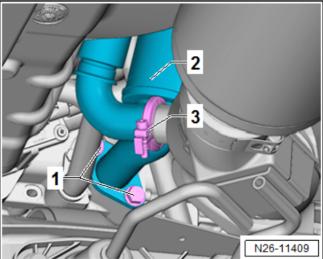
- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



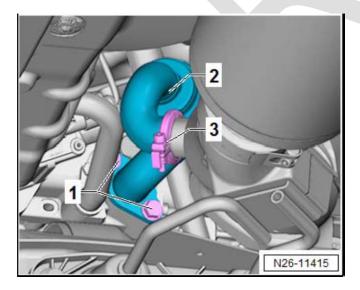
- Remove nut <2> from exhaust gas recirculation filter <1> from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



 Apply screwdriver <2> on side of nut <1> and unscrew nut while simultaneously pressing up on nut

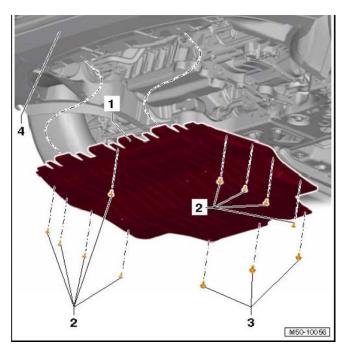


- Open clamp <3> and remove it.
- Remove bolts <1> and remove exhaust gas recirculation filter <2>.

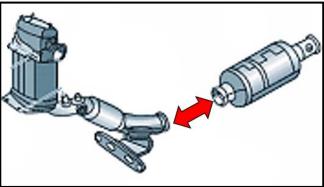


- Set new exhaust gas recirculation filter <2> with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.

Description	Part number
EGR Filter	1K0.253.120.B
Seal	03G.131.547.H
Seal	1K0.253.115.AG
Clamp	1K0.253.725.F



- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - o Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)



# ① NOTE

The NOx trap must be separated from the DPF.

Separate NOx trap from DPF.



 Install the validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.

#### Proceed to Section E

#### Section E – Emissions Modification Procedure

#### (l)

**NOTE** 

#### **IMPORTANT!**

Verify that Campaign 23W1 has been completed before performing the Flash operation listed in the next steps.

**IMPORTANT!** 

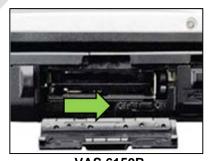
#### • NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met:

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- ✓ The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure
    to do so may cause the update to fail, which could result in damage to the control module.
    Control modules damaged by insufficient voltage will not be covered.
- ✓ The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- ✓ The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- √ If using the Bluetooth VAS 5054A transmitter head, it is connected to the tester with a USB cable.
  - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
     It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

#### **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

#### i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

#### Things to check before starting Software Version Management (SVM):

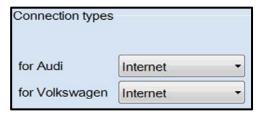
✓ Verify your network connection through LAN by checking the connection icon (lower right of the home screen).



✓ Check the icon <arrow> within the ODIS software that you have a connection.



✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

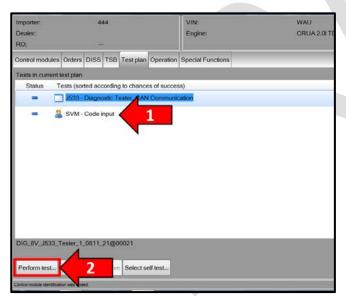


✓ Start a connections test <arrow> and verify that all connections pass.









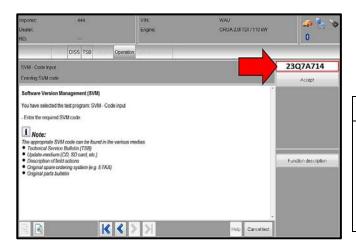
- · Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150X Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.
- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.

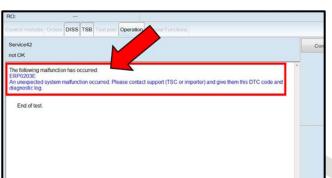
#### NOTE

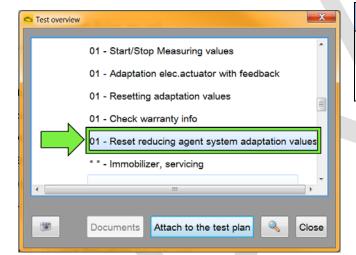
#### RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- From the Test plan screen, Select "SVM Code input" test plan <arrow 1>, then select "Perform test" <arrow 2>.
- Follow the on-screen prompts.







- Enter SVM code "23Q7A714" <arrow>, then select "Accept".
- Follow the on-screen prompts.



#### **KESSY Vehicles!**

- Due to a weak key battery, it is advised to hold the key up to the reader coil during the ignition on/off process of the flash.
- Key(s) should always be left in the vehicle during the flash process.

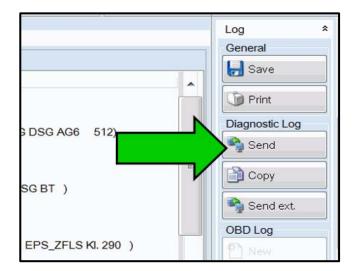
### • NOTE

In the event of a flash error, **STOP**. **DO NOT** attempt the flash multiple times or exit the scan tool in an attempt to get a flash to complete. Obtain GFF diagnostic log, create an ATA ticket and allow the Audi Technicians Helpline to provide direction with flash failures.

U NOTE

After flashing, the vehicle will not start due to adaptation values for reducing agent missing. Perform test plan to reset reducing agent adaptation values prior to attempting to start vehicle.

 Perform "Reset reducing agent system adaptation values" <arrow>.



 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

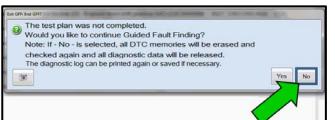
#### NOTE

#### RISK of Non-payment!

Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.

#### i TIP

Technicians may find it helpful to also store the log on a USB stick for back-up.

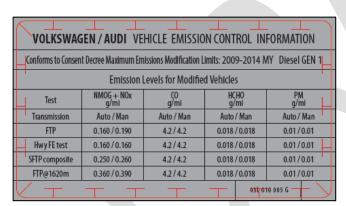


#### i TIP

When exiting GFF, it is important to select "No" <arrow>.

Proceed to Section F.

#### Section F - Supplemental Vehicle Emissions Control Information Label



# Audi A3

# **Install Supplemental Vehicle Emissions Control Information Label**

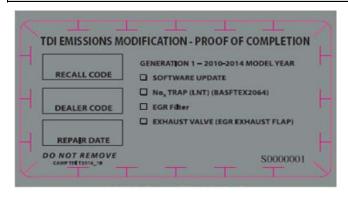
#### i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in location shown.
- Photo documentation of label installed is required.
- Open the hood.
- Clean the surface where the label is to be installed <circle>.
- Install the Supplemental Vehicle Emissions Control Information Label, 03L 010 005 G, in the location shown.

#### Proceed to Section G

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2017 Audi of America, Inc. All Rights Reserved.

#### Section G – TDI Emissions Modification – Proof of Completion Label



MY 2010-2014 - CAMP TDI 2016\_1B

# Install TDI Emissions Modification – Proof of Completion Label

#### i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- When affixing the label, keep in mind that in the future, a Phase 2 completion label will also need to be affixed at a later date alongside this Phase 1 completion label.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Completion Label is to be installed.
- Fill out and affix TDI Emissions Modification –Proof of Completion Label, part number CAMP TDI 2016 1B.

#### 

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided).
- Close the hood.
- Proceed to Section H (California only).

#### Section H - California Only Requirements

# **CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification**

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall — Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.accessaudi.com.



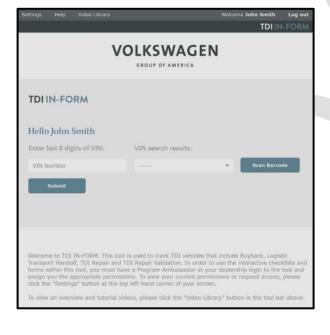
Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon</u> request.

#### **Proceed to Section I**

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2017 Audi of America, Inc. All Rights Reserved.

#### Section I – Service Modification Documentation Requirements





#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

#### i TIP

To access the interactive forms go to the TD Settlement

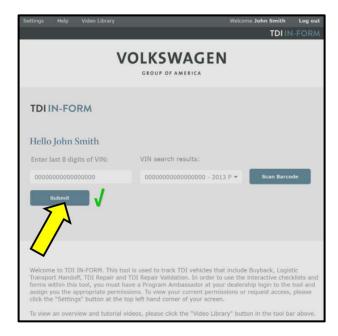
Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

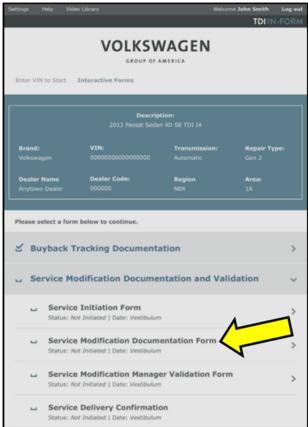
- Enter the "TDI IN-FORM" tool <arrow>.
- Enter the VIN for the vehicle that requires documentation.

#### i TIP

The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.





#### i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

• Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.

#### • NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### **Proceed to Section J**

#### Section J – Campaign Stamp

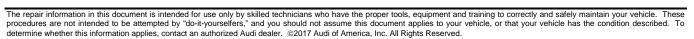
I certify that this campaign
has been performed in strict
accordance with the applicable
Audi repair procedure.

SAGA Code:
Technician:
Date:

Item#: AUD4927ENG

- Once the campaign has been completed, the technician should stamp the repair order.
- Stamps are available for ordering through the Compliance Label Ordering Portal (item# AUD4927ENG).

**ALL WORK IS COMPLETE** 





# Emissions Recall Code: 23U3

**REVISION** 

Subject

2.0L TDI Engine (GEN 1) Emissions Modification – Customer Only (Retail Sold) <u>USA</u> ONLY

**Release Date** 

November XX, 2017

**Revision Summary** 

Updated work procedure, Mechatronic installation for certain vehicles.

Important Repair Information!

CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

Over the next few weeks there will be updates made to ODIS and the campaign circular. Do not retain any hard copies of campaign circulars – only refer to the electronic copies posted to Elsa and ServiceNet.

Affected Vehicles

#### U.S.A. ONLY: 2009-2014 MY Volkswagen 2.0L TDI (Gen 1), Customer Only (Retail Sold)

Country	Model Year	Vehicle Carline
USA	2009-2014	Jetta
USA	2009-2014	Jetta SportWagen
USA	2013-2014	Beetle
USA	2013-2014	Beetle Convertible
USA	2010-2014	Golf

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system parts and software, install a TDI Emissions Modification – Proof of Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

#### **Parts Information**

**03L907281B** (Glow Plug Control Module): Due to the low replacement rate, part # 03L907281B will not be allocated. If this part is needed to support scheduled vehicle repair, submit your request with VIN to <a href="mailto:vwoaspecialservices@vw.com">vwoaspecialservices@vw.com</a>.

**1K0-298-101-A (Base Kit 1), 1K0-254-402-AX (NOx Catalyst), 1K0-298-101 –X (Base Kit 2):** Parts will be allocated prior to owner notification. If allocated parts have been used and your

October 2017 23U3 Page 1 of 89

dealership is at the weekly Upper Order Limit, please submit the backordered sales document number to upperorderlimits@vw.com to have additional parts released.

#### **Code Visibility**

On or about August 11, 2017, this campaign code showed open and available for repair on affected vehicles in Elsa.

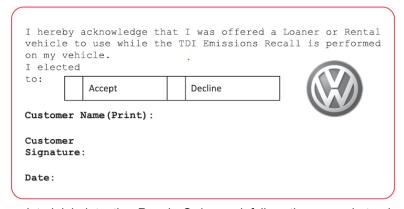
On or about August 11, 2017, affected vehicles were identified and open for repair with this campaign code in the VIN Lookup tool at <a href="https://www.vw.com">www.vw.com</a>.

#### **Owner Notification**

Owner notification took place on August 05, 2017.

# Loaner/Rental Vehicle – REQUIRED!

To remain compliant with the Settlement Agreement, Service Consultants <u>must</u> complete a Loaner/Rental label and it <u>must</u> be signed by the customer. This documents each customer's decision to accept or decline the offer for a loaner or rental vehicle while the Approved Emissions Modification was being performed on their vehicle.



Affix the completed label to the Repair Order and follow the new photo documentation requirements for this label in the IN-FORM tool.

#### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action open on the day of repair to the repair order.

If customer refused campaign work:

✓ <u>U.S. dealers:</u> Submit request via WISE under the <i>Campaigns/Update/Recall Closure</i> option.			
Service Number	23U3		
Damage Code	0099		
Parts Vendor Code	WWO		
Claim Type	Sold vehicle: 7 10		
Causal Indicator	Mark Base Kit I as	causal part*	
Vehicle Wash	Do not claim wash u	nder this action.	
Loaner/Rental Vehicle	Customers are eligib	le to receive a loaner/re	ental vehicle.
Criteria I.D.	01		
	Install <u>Base Kit I and Base Kit II components</u> , install NOx catalyst, install glow plug control module, and *install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Labor operation: 2674 19 99 470 T.U.		
	Quantity	Part number	Description
	1.00	1K0298101A	Base Kit I*
	1.00	1K0254402AX	NOx Catalyst
	1.00	1K0298101X	Base Kit II
	1.00 (if required)	03L907281B	Glow Plug Control Module
	AND Connect battery charger.		
	Labor operation: 2706 89 50 10 T.U.		
	AND		
	Connect vehicle dia	agnostic tester, perforn	n software update for control unit.
	Labor operation: 23	360 22 99	Time state on diagnostic protocol
			(Maximum 70 T.U.)
	AND		•
	Follow IN-FORM tool app.		
	Labor operation: 0183 00 99 20 T.U.		
	Labels are sent free of charge. They cannot be charged to this campaign.		
	Criteria 02 and LOA	ANER/RENTAL claimir	ng on next page

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Criteria I.D.	02			
	Install Base Kit I components, install NOx catalyst, and *install a supplemental Vehicle			
	Emissions Control Information label and TDI Emissions Modification Label.			
	Beetle Convertible ONLY			
	Labor operation: 2674 20 99 190 T.U.			
		2014 20 33		
	Quantity 1.00	Part number 1K0298101A	Description Base Kit I*	
	1.00	1K0254402AX	NOx Catalyst	
	AND			
	Connect battery charger.			
	Labor operation:	_	10 T.U.	
	AND			
		diagnostic tester perf	form software update for control unit.	
	Labor operation:	-	Time state on diagnostic protocol	
	Labor operation.	2000 24 33	(Maximum 70 T.U.)	
	AND		(Maximum 70 1.0.)	
		A Annal ann		
	Follow IN-FORM			
	Labor operation	0183 00 99	20 T.U.	
	OR			
	.ALL OTHER VE	<u>HICLES</u>		
	Labor operation:	2674 21 99	170 T.U.	
	Quantity	Part number	Description	
	1.00	1K0298101A 1K0254402AX	Base Kit I* NOx Catalyst	
	AND	TR0234402AX	NOX Catalyst	
		-1		
	Connect battery	-	40.711	
	Labor operation:	2706 89 50	10 T.U.	
	AND			
		-	form software update for control unit.	
	Labor operation:	2360 23 99	Time state on diagnostic protocol	
			(Maximum 70 T.U.)	
	AND			
	Follow IN-FORM	/I tool app.		
	Labor operation	: 0183 00 99	20 T.U.	
	Labels are sent free of charge. They cannot be charged to this campaign.			
	LOANER/RENT/	AL claiming on next	page	

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Volkswagen dealer. ©2017 Volkswagen Group of America, Inc. All Rights Reserved.

- LOANER/RENTAL MUST BE CLAIMED ON A SEPARATE LINE -		
DO NOT PUT ON CAMPAIGN CLAIM		
LOANER/RENTAL	Claim Type: A1A	
	Service #: CU01	
	Damage Code: 0010	
	Removed Part : MOB	
	Outside LO Number : CU010000	
DO NOT PUT LOANER/RENTAL ON CAMPAIGN CLAIM		

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At this time, affected new and used vehicles in dealer inventory are not included in this emissions modification release.

#### NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

#### **Required Parts**

Criteria	Quantity	Part Number	Part Description	
	1	1K0 298 101 A	Base Kit I	
	1	1K0 254 402 AX	NOx Catalyst	
	1	1K0 298 101 X	Base Kit II (Criteria 01 - MY 2009 only)	
	1 (if required)	03L 907 281 B	Glow Plug Control Module (Criteria 01 - MY 2009 only)	
01	1	03L 010 005 G	Vehicle Emissions Control Information Label	
	1 (if required)	XXX XXX XXX	Mechatronic Unit	
	1	Camp TDI 2016 1A	TDI Emissions Modification Label (MY 2009 only)	
	OR			
	1 (if required)	Camp TDI 2016_1D	TDI Emissions Modification Label (MY 2009 w/ Mechatronic)	

Criteria	Quantity	Part Number	Part Description
	1	1K0 298 101 A	Base Kit I
02	1	1K0 254 402 AX	NOx Catalyst
02	1	03L 010 005 G	Vehicle Emissions Control Information Label
	1	Camp TDI 2016 1B	TDI Emissions Modification Label (MY 2010-2014)

# IMPORTANT! Maintaining Your TDI Campaign Label Supply

- SAGA claims count! Warranty Administrators should enter TDI claims promptly to ensure labels can be allocated to support future repairs.
- TDI Labels are allocated daily, free of charge, based on the count of TDI claims entered in SAGA.
- TDI labels cannot be ordered through the Compliance Label Ordering Portal. If you have questions, please email <u>labelrequest@vw.com</u>.

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#### **Required Tools**



VAS6150X – Diagnostic Tester (or equivalent) VAS5054A – Remote Diagnosis Head (or

equivalent)



GRX3000VAS – Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com

#### TIP

This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.

#### **NOTE**

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Socket 22mm -T10491-



Torque wrench -V.A.G 1331- (or equivalent)



Torque wrench -V.A.G 1332- (or equivalent)



Locating pins -T10096-



Hose clamp pliers -VAS 6362- (or equivalent)



Engine and gearbox jack -VAS 6931-



Transportation lock for flexible joint -T10404-



Tool set -T10395 A-



-3346- Note: 2 Spindles 3346/2 with nuts 3346/3 from assembly tool -3346-



VAS6254 – Chain Pipe Cutter (or equivalent)

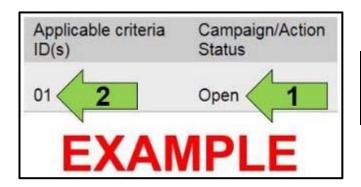
#### **Emissions Modification Instructions**

#### Section A - Check for Previous Emissions Modification

#### TIP

If the correct TDI Emissions Modification Label is present, no further work is required.

- Criteria 01, 2009 MY vehicles: CAMP TDI 2016\_1A
- Criteria 02, 2010-2014 MY vehicles: CAMP TDI 2016\_1B



• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

#### TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.



- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

#### **NOTE**

At this time it is required to complete this action in conjunction with **Campaign 24CV**. Campaign 23U3 requires the condition of the Heated O2 Sensor -G39- to be verified **BEFORE** beginning the flash operations contained in this action.

# CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

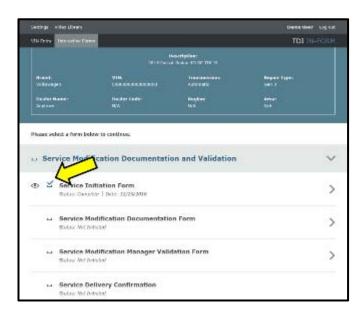
Refer to **Campaign 24CV** at this time, and complete that action before continuing.

**Proceed to Section B** 

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#### Section B - Check for Service Initiation





#### **NOTE**

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

Look for the image below to indicate labor operations, parts, or labeling that requires IN-FORM tool image documentation.



#### NOTE

#### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate
     Service Modification Documentation
     Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

**Proceed to Section C** 

#### Section C - Check for Pre-existing conditions, Vehicle Modifications, and MIL light on



- Perform a visual inspection of the intake, exhaust, and emissions systems.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals damage or concerns, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals no damage or concerns, continue the work procedure.



- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components <u>are</u> found, **STOP**, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue the work procedure.



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue the work procedure.

#### TIP

- VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.
- The purpose for this step is to document vehicle condition prior to initiation of this action and does not authorize the repair of any pre-existing conditions.

#### NOTE

At this time it is required to complete this action in conjunction with **Campaign 24CV**. Campaign 23U3 requires the condition of the Heated O2 Sensor -G39- to be verified **BEFORE** beginning the flash operations contained in this action.

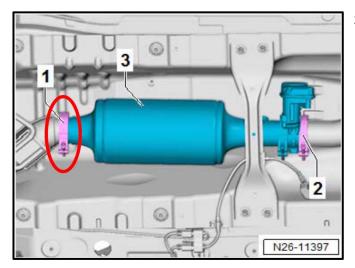
# CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

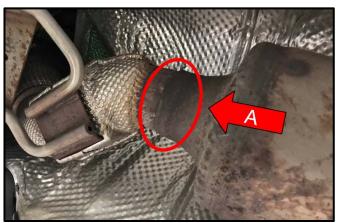
Refer to **Campaign 24CV** at this time, and complete that action before continuing.

For Model Year 2011-2014 Criteria 02 vehicles: Proceed to Section D

For Model Year 2009 Criteria 01 vehicles: Proceed to Section E

For Model Year 2010 Criteria 02 vehicles: Proceed to the next step for Aftertreatment System inspection





#### 2010 Model Year Vehicles ONLY:

- Raise the vehicle on the hoist and inspect the aftertreatment system configuration.
- If the vehicle is a 2010 Model Year with a <u>two-piece</u> DPF and NOx Trap system that has a clamp in location <1>:
  - Proceed to Section D for Criteria 02 (MY 2010-2014)

- If the vehicle is a 2010 Model Year Vehicle with a one-piece DPF and NOx Trap system that has a welded joint as shown in location <A>:
  - STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
     DO NOT continue with the repair at this time.

#### Section D – Emissions Kit Installation (Criteria 02 – MY 2010-2014 ONLY)

#### NOTE

At this time, verify that **Campaign 24CV** has been completed. Campaign 24CV must be completed before continuing with this repair procedure.

THE 24CV CAMPAIGN MUST BE COMPLETED BEFORE BEGINNING THIS CAMPAIGN!

#### **NOTE**

Section D addresses vehicles built with a <a href="two-piece">two-piece</a>
Diesel Particulate Filter/Lean NOx trap exhaust
system. This system was introduced starting in Model
Year 2010. For vehicles built with a <a href="mailto:one-piece">one-piece</a>
system, the DPF must be replaced as there is no
connection on the original components.

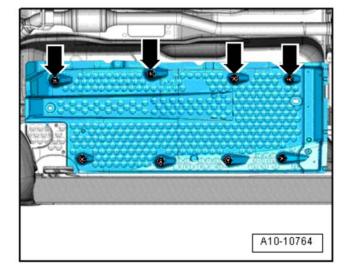
Begin with Section E for vehicles having Criteria 01, with a <u>one-piece</u> DPF/Lean NOx trap system for Model Year 2009 vehicles **ONLY**.

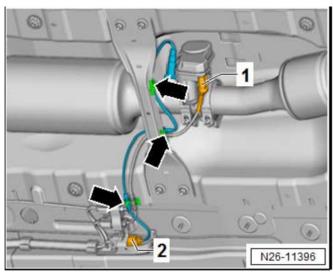
If the vehicle is a 2010 Model Year Vehicle with a <a href="mailto:one-piece">one-piece</a> DPF and NOx Trap system that has a welded joint, **STOP**, create a VTA ticket and contact the Volkswagen Technicians Helpline. **DO NOT** continue with the repair at this time.

- Open hood.
- Raise vehicle on hoist.
- Unscrew nuts <arrows> and pull underbody cladding down slightly.

#### TIP

A wedge could be placed between vehicle body and cladding to allow more work space.





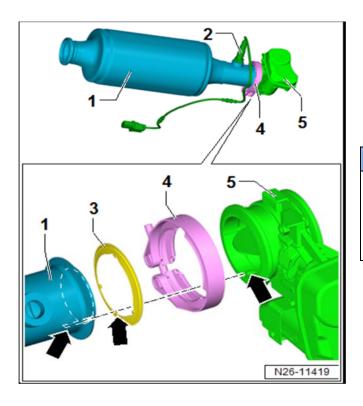
1 2 2 2 N26-11397

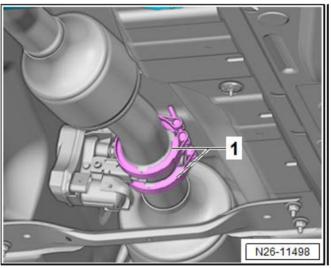
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>.
   Remove plug from retainer.
- Open fasteners for heat shield and pull connector
   off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.

#### TIP

Take a photo of this area now for help with harness routing during reinstallation later.

 Loosen clamps <1 and 2> and remove NOx storage catalytic converter together with exhaust door control unit -J883-.





- Screw new oxygen sensor after catalytic converter -G130- <2> into new NOx storage catalytic converter <1> and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.

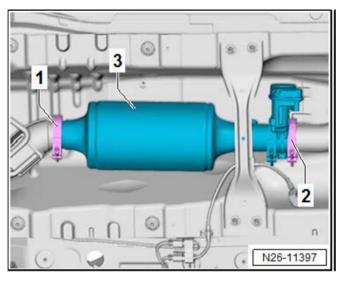
#### **NOTE**

Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps <1> so that they will not collide with underbody.

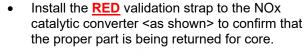
#### **NOTE**

Install clamps on the exhaust pipe before installing pipe into vehicle. Do not attempt to stretch clamps around pipe once installed, or clamps may fail to seal properly.



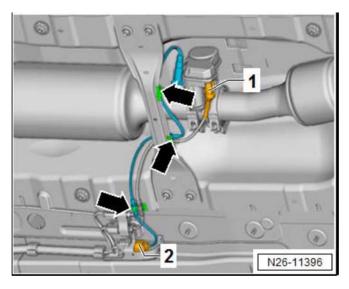
- Set clamp 1K0 253 725 B <2> in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.



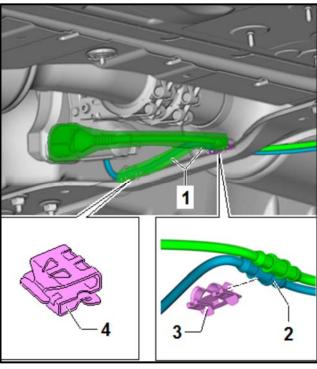




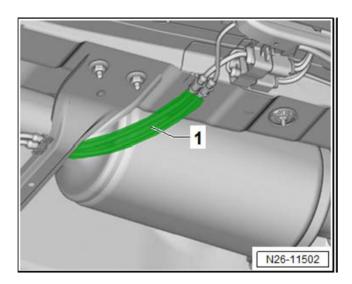




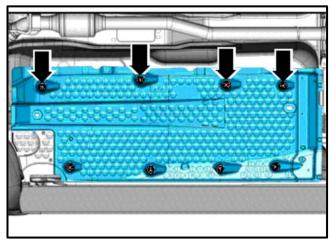
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.



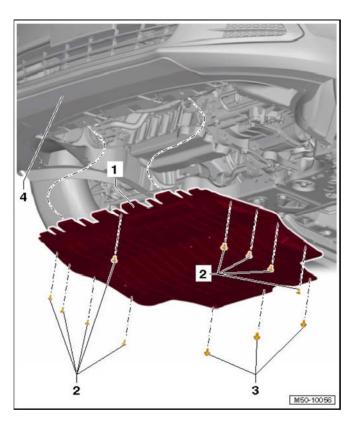
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



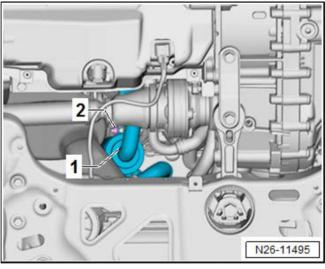
• Wrap new heat insulation mats <1> around wiring and close fasteners.



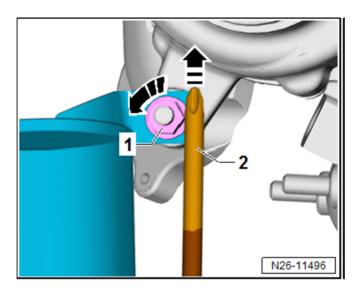
 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



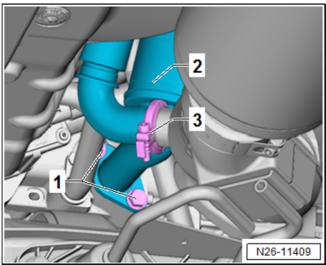
- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



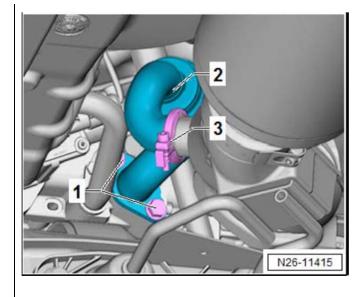
- Remove nut <2> from exhaust gas recirculation filter <1> from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



 Apply screwdriver <2> on side of nut <1> and unscrew nut while simultaneously pressing up on nut.



- Open clamp <3> and remove it.
- Remove bolts <1> and remove exhaust gas recirculation filter <2>.



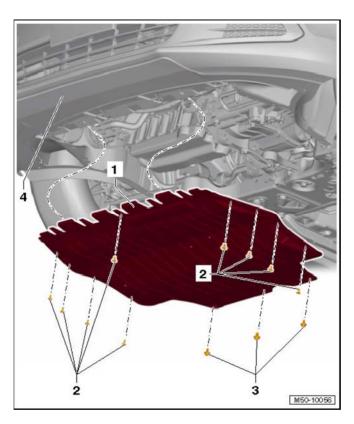
- Set new exhaust gas recirculation filter <2> with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.

Description	Part number
EGR Filter	1K0 253 120 B
Seal	03G 131 547 H
Seal	1K0 253 115 AG
Clamp	1K0 253 725 F



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- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)

#### **Proceed to Section F**

# Section E - Emissions Kit Installation (Criteria 01 - MY 2009 ONLY)

#### NOTE

At this time, verify that **Campaign 24CV** has been completed. Campaign 24CV must be completed before continuing with this repair procedure.

THE 24CV CAMPAIGN MUST BE COMPLETED BEFORE BEGINNING THIS CAMPAIGN!

#### NOTE

Section E addresses 2009 Model Year vehicles built with a <u>one-piece</u> Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in Model Year 2009 and ended with Start of Production (SOP) Model Year 2010. For vehicles built with a <u>one-piece</u> system, the DPF must be replaced as there is no connection on the original components.

Begin with Section D for a 2010-2014 Model Year **two-piece** DPF/Lean NOX trap system.

If the vehicle is a 2010 Model Year Vehicle with a **onepiece** DPF and NOx Trap system that has a welded joint, **STOP**, create a VTA ticket and contact the Volkswagen Technicians Helpline.

**DO NOT** install the Criteria 01 **two-piece** aftertreatment system onto a 2010 Model Year Vehicle unless instructed to do so by the Volkswagen Technicians Helpline.

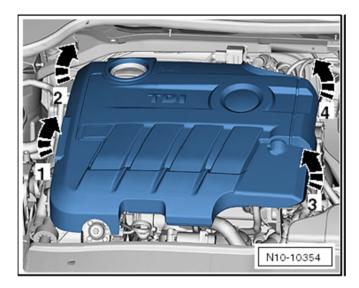
#### **WARNING**

When doing any repair work, especially in the engine compartment, pay attention to the following due to the cramped conditions:

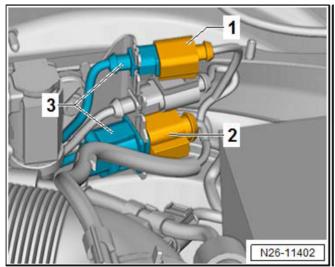
- Route lines and electrical wiring so that they are in their original positions E.g. for fuel, hydraulics, coolant and refrigerant, brake fluid and vacuum.
- Ensure that there is sufficient clearance to all moving or hot components.

### **CAUTION**

The bracket for the engine cover on the cylinder head cover may break off if improperly removed. Always remove the engine cover panel according to the following instructions.



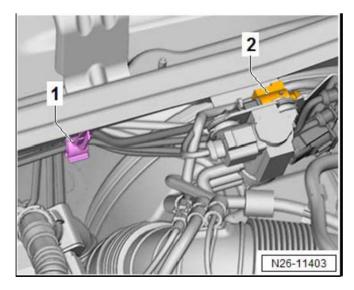
 Pull engine cover up out of fastening elements near <arrows> in order shown. To do this, grip as far as possible beneath engine cover.



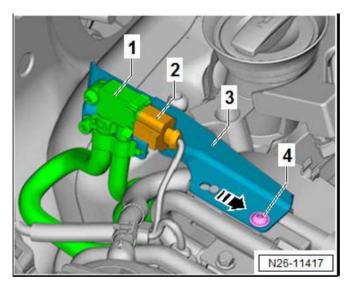
- Disconnect »orange« connector for exhaust gas temperature sender 2 -G448- <1> and »black« connector for oxygen sensor -G39- <2> on plenum chamber bulkhead.
- Remove wiring <3> from retainer and move clear.

# TIP

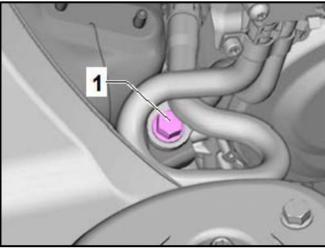
Take a photo of this area now for help with harness routing during reinstallation later.



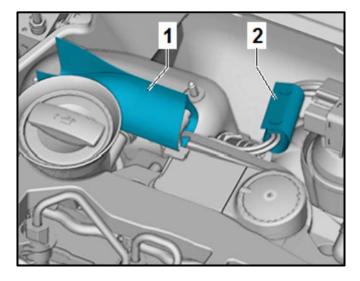
- Disconnect »brown« connector for exhaust gas temperature sender 3 -G495- <2> (secured behind bracket).
- Thread lines out of brackets <1> on plenum chamber bulkhead and on turbocharger.



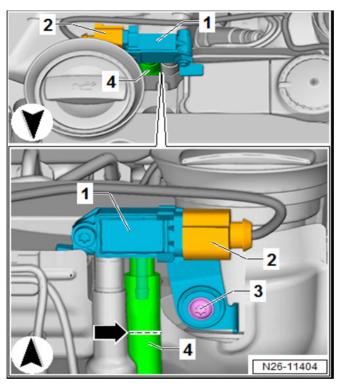
- Pull connector <2> off differential pressure sensor -G505- <1>.
- Remove securing bolt <4>, remove bracket <3> with differential pressure sensor -G505- <1> in <direction of arrow> and move aside. Control lines remain connected.



 Unscrew securing bolt <1> on upper bracket for particulate filter.



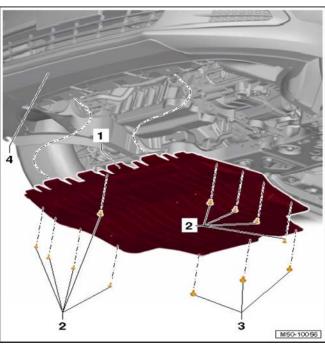
- Open fasteners on heat insulation <1> for exhaust pressure sensor 1 -G450-.
- Open heat insulation <2> for wiring and remove.



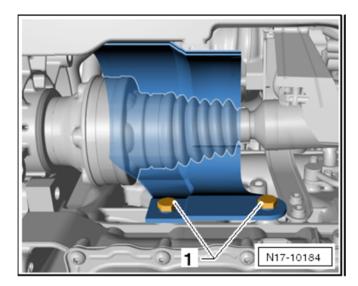
- Pull connector <2> off exhaust pressure sensor 1
   -G450- and remove securing bolt <3>.
- Cut control line <4> to exhaust gas recirculation cooler with an appropriate tool (e.g. utility knife) at the line <arrow> indicated in figure.
- Move bracket with exhaust pressure sensor 1
   -G450- aside (control line to particulate filter remains connected).

#### TIP

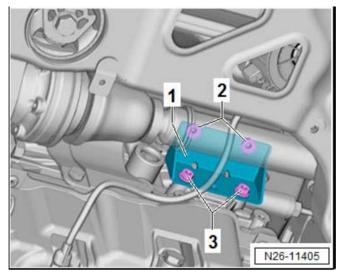
Bundle the loose harnesses with tape or similar means. Place harnesses on top of the DPF to prevent them from catching on vehicle while removing the DPF.



- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



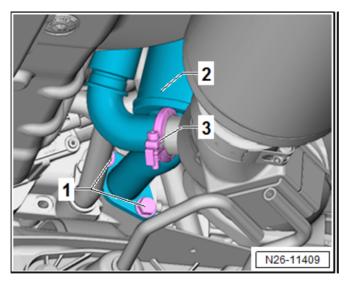
 Unscrew bolts <1> and remove heat shield for right drive shaft.



# **NOTE**

Unscrew securing nuts above bracket <2> with ratchet wrench -T10384-. In some cases, the bracket cannot be removed until the particulate filter has been detached.

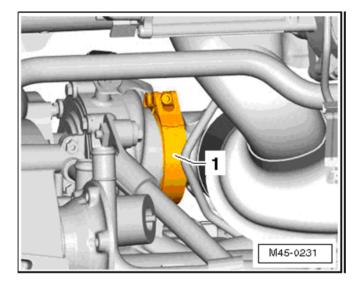
 Remove nuts <2 and 3> and remove lower bracket for particulate filter <1>.



Open clamp <3> and remove it.

#### **NOTE**

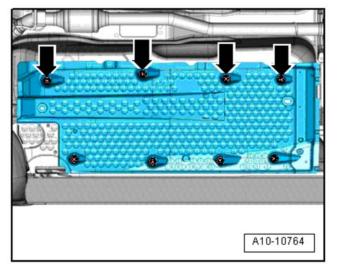
The exhaust gas recirculation filter <2> is removed after the particulate filter has been removed.



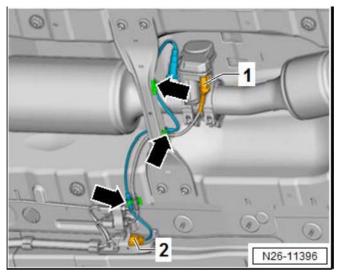
# **NOTE**

Position of clamp <1> may vary. If necessary, use 5 mm bit with ball head (e.g. T10058).

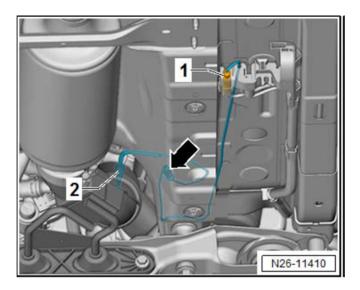
 Loosen and remove clamp <1> connecting turbocharger and particulate filter.



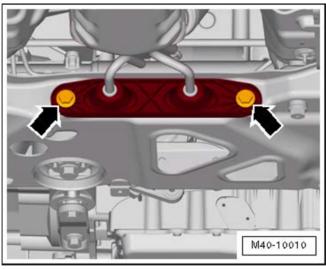
• Unscrew nuts <arrows> and pull underbody cladding on right down slightly.



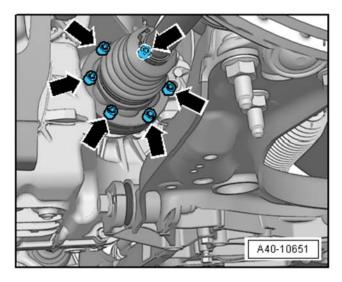
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>.
   Remove plug from retainer.
- Open fasteners on heat shield, pull connector
   1> off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.



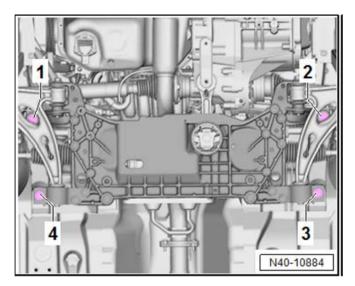
 Disconnect connector <1>. Take electrical wire from exhaust gas temperature sensor 4 -G648-<2> on heat shield out of clip <arrow> and bracket and move to side.



• Remove bolts <arrows> from exhaust system bracket on subframe.



 Remove bolts <arrows> and remove right drive shaft from transmission. Rest drive shaft on front axle.



 To fix the position of the subframe, the locating pins -T10096- must be screwed one at a time into positions <1, 2, 3 and 4>.

#### **NOTE**

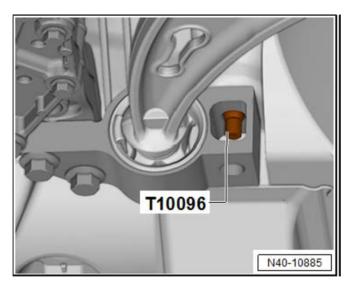
The locating pins -T10096- may be tightened only to max. 20 Nm, or the threads of the locating pins will be damaged.



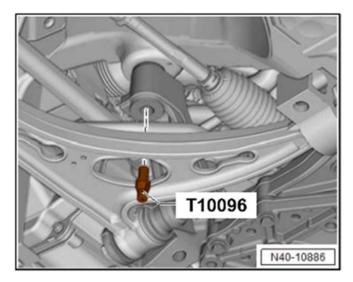
# **NOTE**

### Severe Damage RISK!

When installing the subframe locating pins -T10096-, it is possible to damage the subframe mount threads due to the normal variance in alignment. Damage to the subframe mount threads would be an extensive, body-shop repair that is not covered under this action. Only use hand tools for this process. If the locating pins bind, they should be backed out, threads cleaned and restarted.



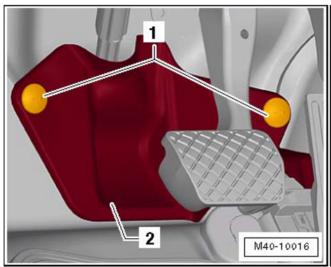
 One at a time, remove securing bolts on mounting bracket and replace them with locating pins -T10096- on both sides. Tighten locating pins to 20 Nm.



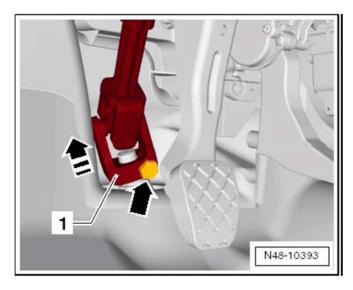
 One at a time, replace bolts in brackets with locating pins -T10096-. Tighten locating pins to 20 Nm.

#### TIP

The position of the front axle is now fixed.



- Turn steering wheel to straight-ahead position and remove ignition key to engage steering wheel lock.
- If the vehicle has the keyless locking and starting system "Keyless Access", switch off ignition and open driver door to engage steering wheel lock.
- Remove bolts <1> and remove footwell trim <2>.



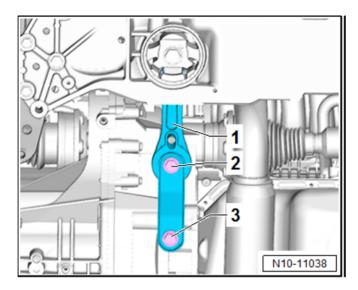
#### **CAUTION**

Never perform the following actions if the U-joint has been separated from the electromechanical steering mechanism:

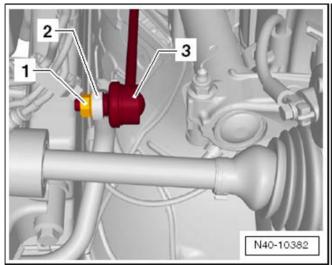
- Switching ignition on
- Turning steering mechanism
- Turning steering column

These points must always be complied with because these actions can cause irreparable damage to the clock spring or other items that are not covered under this action.

 Remove bolt <arrow> from U-joint <1> and pull off U-joint in <direction of arrow>.



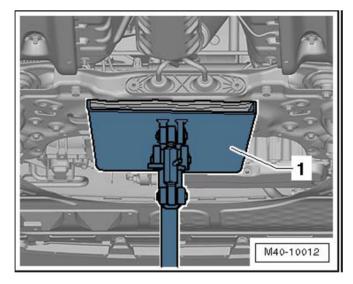
Remove bolts <2 and 3> for pendulum support
 <1> from gearbox.



- Unscrew hexagon nut <1> on left and right from coupling rod <3>.
- Pull coupling rod <3> on the left and right out of anti-roll bar <2>.

#### **TIP**

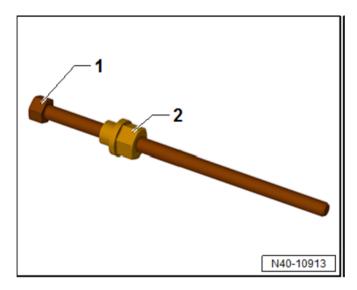
Apply penetrating oil to the hexagon <1> nut to aid in removal.



Place engine and gearbox jack -VAS 6931- <1> under subframe.

#### **NOTE**

Secure the subframe in position on the engine and gearbox jack -VAS 6931- using the included retaining strap if you are **NOT** utilizing the Screw Nuts -3346/3- and Spindles -3346/2- listed in the next steps.

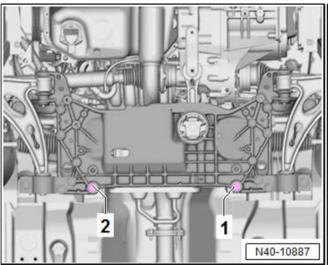


Optional method for securing, raising, and lowering the subframe utilizing Screw Nuts -3346/3- <2> and Spindles -3346/2- <1>:

 Install Screw Nuts -3346/3- <2> by hand as shown onto spindles -3346/2- <1> to the end of threads as shown.

#### **NOTE**

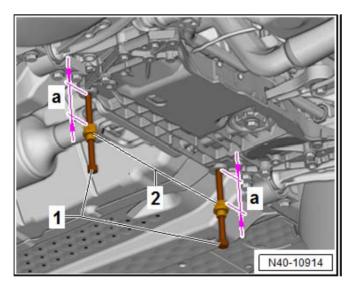
The purpose of including and utilizing special tools Screw Nuts -3346/3- and Spindles -3346/2- in this work instruction is to allow greater clearance and working area in and around the subframe during the DPF removal. These tools and subsequent operation steps are not required, but recommended.



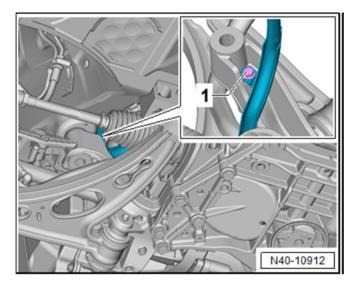
#### **NOTE**

For clarity of illustration, the following steps are shown without the engine and gearbox jack in position.

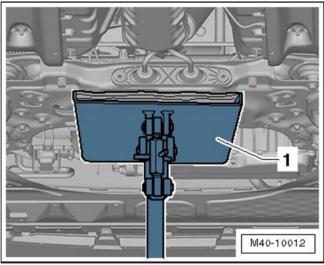
Unscrew bolts <1 and 2>.



 Screw in spindles 3346/2 <1> by hand until distance <a> equals 90 mm.



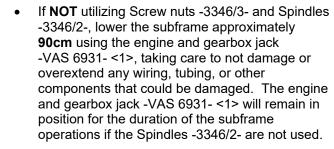
 Lower subframe about 5cm and remove bolt <1> on the wire harness bracket for steering gear.



-VAS 6931- <1> and completely remove it from work area.

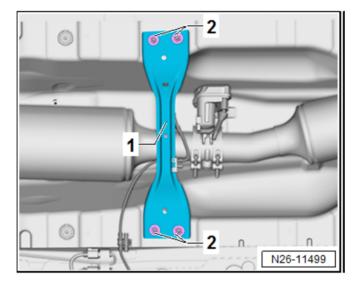
# **TIP**

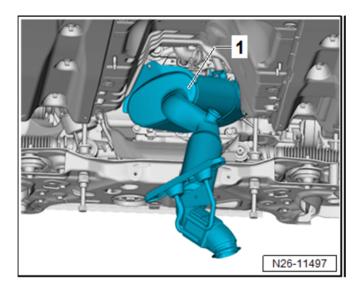
The subframe is now supported by spindles 3346/2.



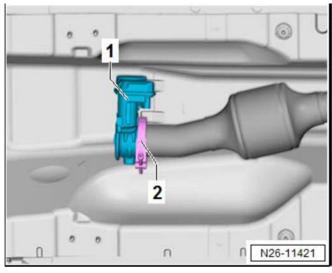
If utilizing the Screw Nuts -3346/3- and Spindles -3346/2-, lower the engine and gearbox jack

- Remove hexagon nuts <2> from front tunnel cross-piece <1> and remove tunnel cross-piece.
- Remove securing clamp between NOx storage catalytic converter and exhaust door control unit -J883-.

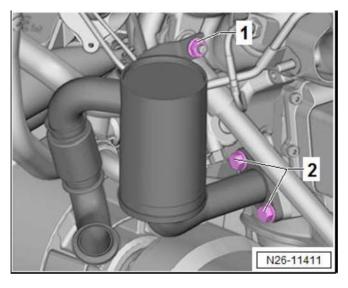




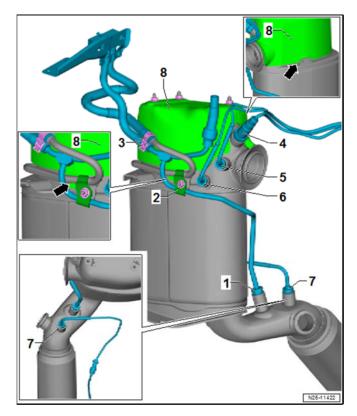
 With the help of a second technician, remove particulate filter. Do this by turning the particulate filter <1> out of center tunnel. Note electrical wiring and components when doing this.



• Open clamp <2> and remove exhaust door control unit <1>.

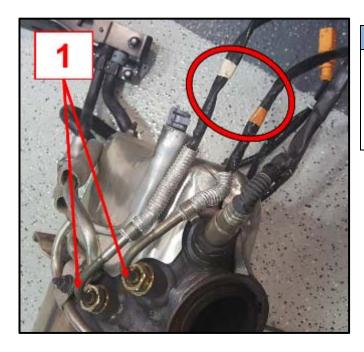


 Remove nut <1> and bolts <2>, and remove exhaust gas recirculation filter.



#### TIP

Before the installation of the newly assembled filter, place the new and old assembly side-by-side for comparison.



# Assemble particulate filter as follows before installation:

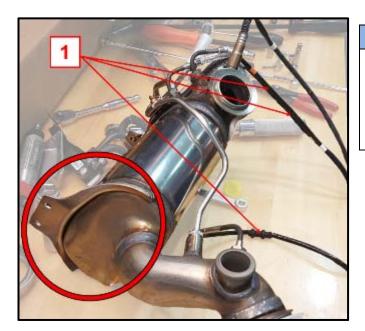
#### **CAUTION**

If transportation lock was not included among items supplied, ensure that flexible joint is fixed with transportation lock -T10404- to prevent damage to the flex pipe.

- 1 Position control line and screw in union nut hand-tight.
- 2 Position retainer for control line, screw in bolt, tighten to 9 Nm and then tighten union nut to 45 Nm.
- 3 Attach connecting hoses from differential pressure sensor -G505- as shown and secure with spring clamps.
- 4 Screw in oxygen sensor -G39- and tighten to 52 Nm.
- 5 Screw in exhaust gas temperature sensor 2
   -G448- (connector color: orange, angled 110°)
   and tighten to 45 Nm.
- 6 Screw in exhaust gas temperature sensor 3
   -G495- (connector color: brown) and tighten to 45
   Nm.
- 7 Screw in exhaust gas temperature sensor 4 -G648- (connector color: beige, angled 90°) and tighten to 45 Nm.
- 8 Set heat shield in position and check that it is properly seated <arrows>. Tighten nuts to 10 Nm.

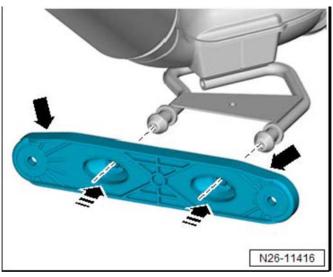
#### **NOTE**

When installing the exhaust gas temperature sensors to the DPF, it is possible to install the sensors <1> in the wrong locations. Sensors installed in the wrong positions will not function properly. Pay attention to the sensor color coding <circle> when installing sensors into the DPF.

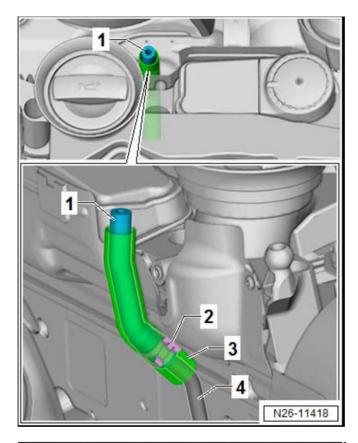


#### **NOTE**

When "bench-installing" the exhaust gas temperature sensors to the DPF, the edge of the lower bracket <circle> can damage the sensor wires <1> if they are allowed to get underneath the bracket while positioning the DPF. Pay special attention to the sensor wiring to prevent damage to these sensors.

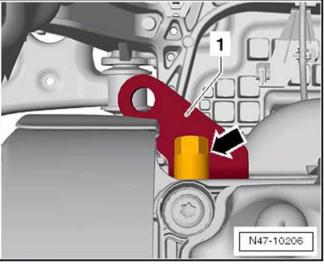


 Press bracket in <direction of arrow> onto pins of particulate filter. The bracket edge which tapers towards the ends <arrows> must face upwards.



# Renewing hose for control line exhaust pressure sensor 1 -G450-

- Remove heat shield <3>.
- Open clamp <2> and pull hose which was cut during removal <1> from control line <4>.
- Renew hose <1> and tighten clamp <2>. Push heat insulation <3> over hose and clamp.

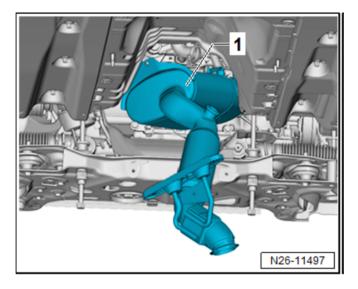


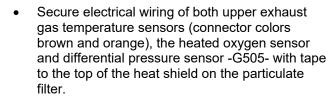
# Installing particulate filter:

#### **CAUTION**

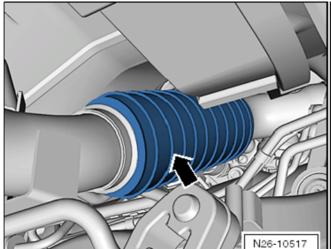
Danger of damaging flexible joint between particulate filter and NOx storage catalytic converter. When removing and installing:

- Do not bend flexible joint more than 10°.
- Install flexible joint free of tension.
- Take care not to damage wire mesh on flexible joint.
- The flexible joint must be secured with transportation lock -T10404- to prevent overstretching.
- Always hold the particulate filter by the heavy casing when transporting or handling it.
  - Loosen nut <arrow> for bracket <1> on top of cylinder head a few turns.

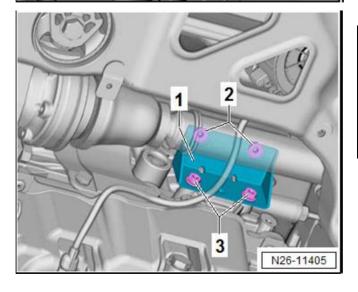




- Position new clamp 1K0 253 725 over the intake funnel of the particulate filter. Orient new clamp (positioned downward) to the same clocking as the original clamp.
- Move particle filter into installation position by »turning« it into center tunnel. Take care not to damage electrical wiring or components.



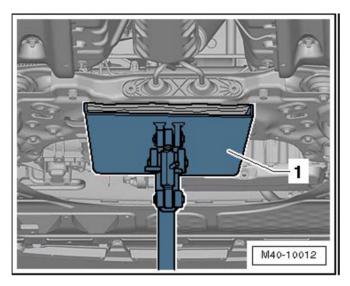
 Ensure that the transportation lock -T10404-<arrow> is properly seated.



#### **NOTE**

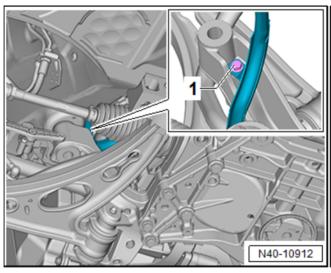
Unlike the production bracket, the supplied bracket no longer has threaded studs. It must be screwed to the particulate filter using the supplied bolts, and the nuts must be screwed on from below. The ball indentation on the bracket faces the crankcase.

- Hold bracket in place and start new bolts for nuts
   in bracket from above.
- Start nuts <3 and 2> by hand a few full turns.

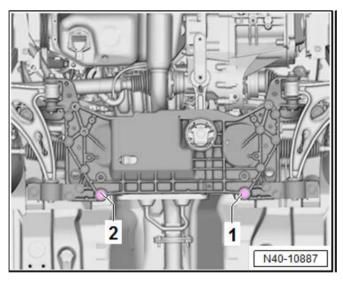


### Reinstalling subframe:

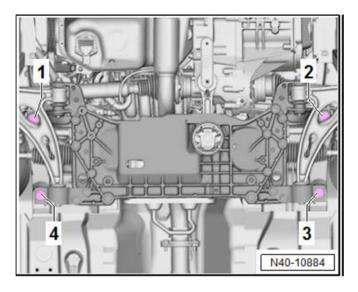
 If Spindles -3346/2- are being used, reposition engine and gearbox jack -VAS 6931- <1> under subframe.



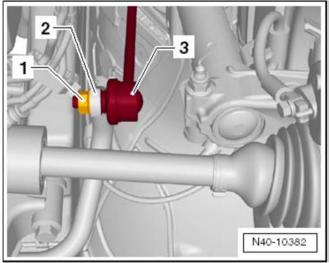
- Raise the subframe until it is approximately 5 cm away from the vehicle chassis and screw in bolt
   on the wire harness bracket for steering gear and tighten to 3 Nm.
- Carefully raise subframe to installation position taking locating pins into consideration.



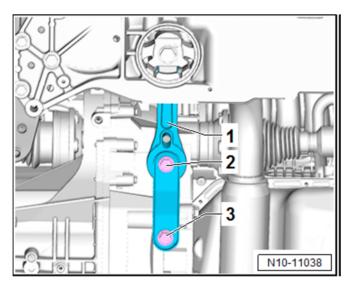
 If installed, remove spindles -3346/2- and screw in new bolts (M12 x 110 mm) at positions <1 and 2>. Tighten to 70 Nm and turn an additional 90°.



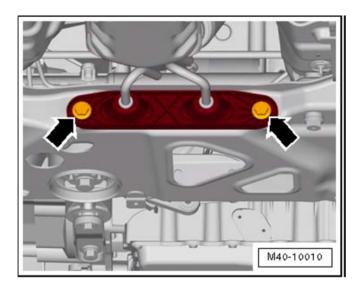
- Remove locating pins one at a time and replace them with new bolts (M12 x 90 mm) at locations
   1, 2, 3, and 4>.
- Tighten bolts to 70 Nm, then tighten them an additional 90°.
- Take load off engine and gearbox jack
   -VAS 6931-, disconnect the securing strap, and remove it from work area.



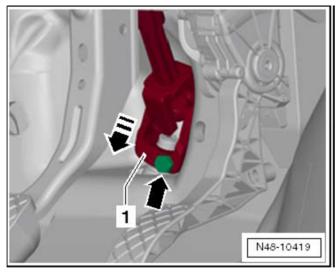
 Guide coupling rods <3> on left and right into anti-roll bar <2>, screw on new hexagon nuts <1> and tighten to 65 Nm.



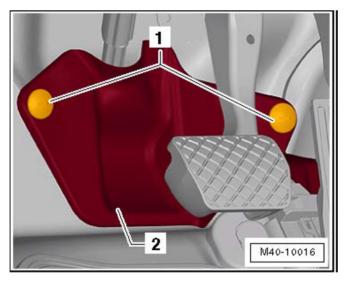
 Screw in new bolts <2 and 3> for pendulum support <1>, tighten them to 50 Nm and then tighten and additional 90°.



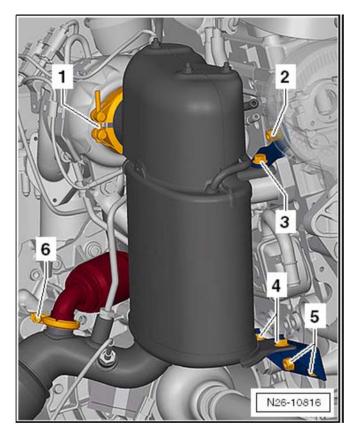
 Screw new bolts <arrows> loosely into exhaust system bracket on subframe.

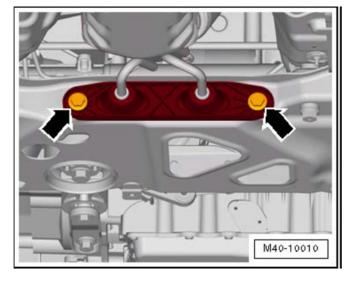


 Fit U-joint in <direction of arrow>, screw in new bolt <arrow> for U-joint <1> and tighten to 30 Nm.



Position footwell trim <2> and hand-tighten bolts <1>.





# Tightening order for particulate filter:

#### NOTE

Due to restricted space, the nut <2> cannot be reached with a torque wrench. Use a commercially available 13 mm combination wrench with a 15° offset and a total length of 140 mm.

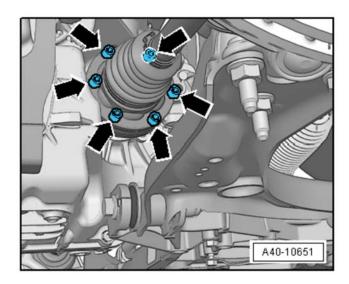
Α	Position particulate filter with new seal on		
	turbocharger and secure clamp <1> loosely.		
В	Screw in bolts <2 to 5> loosely by hand.		
	<ul> <li>Particulate filter and retainer must be</li> </ul>		
	able to move		
С	Tighten clamp <1>	7 Nm	
D	Tighten nuts <5>	23 Nm	
Е	Tighten nuts <4>	23 Nm	
F	Tighten nut <2>	23 Nm	
G	Tighten nut <3>	23 Nm	

# **NOTE**

# **RISK of Exhaust Leak!**

Tightening sequence must be followed. Clamp <6> is installed when the exhaust gas recirculation filter is installed.

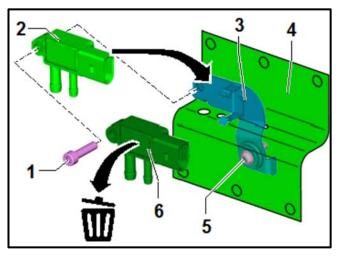
- Tighten bolts <arrows> securing exhaust system bracket to subframe to 23 Nm.
- Remove transport and protective packaging from flexible joint for particulate filter.



#### **NOTE**

The lengths of the driveshaft/gearbox connecting bolts differ depending on gearbox:

- Manual gearbox = M10x52 mm (N 909 911 02)
- Dual clutch gearbox (DSG) = M10x23 mm (N 909 910 02)
  - Position right drive shaft and screw in new bolts <arrows>. Tighten bolts initially to 10 Nm, then tighten further to 70 Nm using a crisscross pattern.



#### Installing exhaust pressure sensor 1 -G450-

#### **SPECIAL 2010 Model Year Instruction**

The EGR and DPF Differential Pressure Sensors for Model Year 2010 Vehicles is different than 2009 Vehicles. If you are following this work instruction section to repair a 2010 MY Vehicle at the direction of the Volkswagen Technicians Helpline, it is **REQUIRED** that Differential Pressure Sensor part # **076 906 605 B** is installed. Failure to install the proper part # Differential Pressure Sensors will result in fault codes.

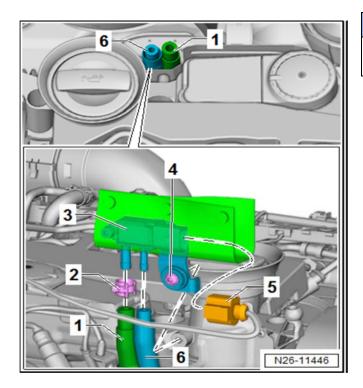
Be certain to inspect the part numbers of both the EGR and DPF Differential Pressure sensors, and install the correct part # sensors in both locations.

Part Number	Description	Quantity
076 906 605 B	MY 2010 ONLY Differential Pressure Sensor	2

#### **NOTE**

For greater clarity, exhaust pressure sensor 1 -G450-is shown here from behind (perspective of plenum chamber bulkhead).

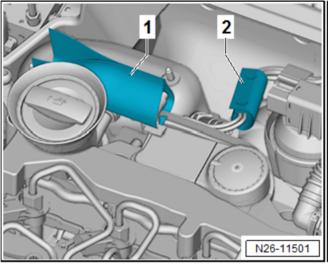
- 1 Remove bolt <1>.
- 2 Remove and dispose of old pressure sensor <6>
- 3 Insert new pressure sensor <2> into bracket <3>.
- 4 Screw in bolt <1> and tighten to 10 Nm.
- 5 Guide bracket with pressure sensor through openings in new heat shield <4>.



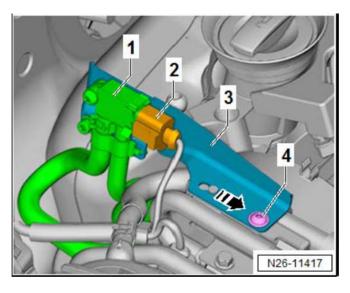
# **NOTE**

Take care to connect the hoses <6> (thin) and <1> (thick) correctly.

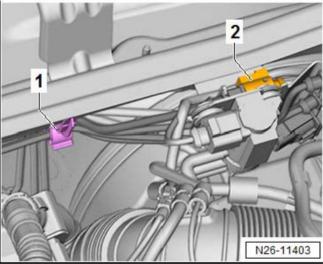
- Guide exhaust pressure sensor 1 -G450- <3> into open ends of hoses as shown and secure thicker hose <1> with new clamp <2>.
- Screw in bolt <4>, tighten to 2 Nm and connect connecter <5>.



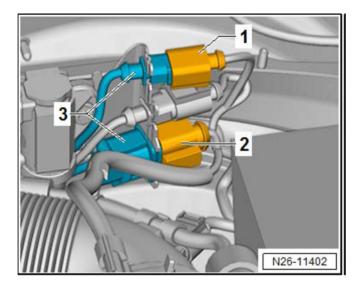
- Close fasteners on heat insulation mat <1> around exhaust pressure sensor 1 -G450-.
- Wrap new heat insulation mat <2> around wiring and close fasteners.



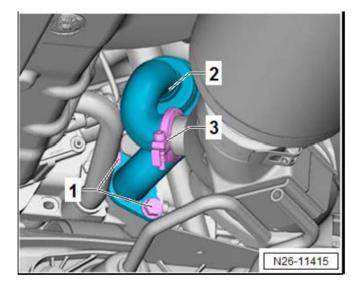
- Position bracket <3> with differential pressure sensor -G505- <1> opposite <direction of arrow>, screw in new securing bolt <4> until head makes contact and tighten to 4 Nm.
- Push connector <2> onto differential pressure sensor -G505- <1>.



- Connect »brown« connector for exhaust gas temperature sensor 3 -G495- <2> and secure behind bracket.
- Thread lines into brackets <1> on plenum chamber bulkhead and on turbocharger.



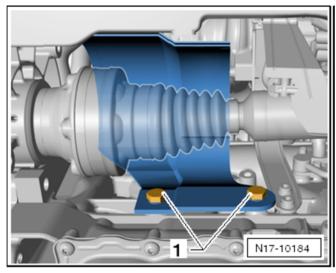
 Connect »orange« connector for exhaust gas temperature sensor 2 -G448- <1> and »black« connector for heated oxygen sensor -G39- <3> on plenum chamber bulkhead and secure wiring <3> in retainer.



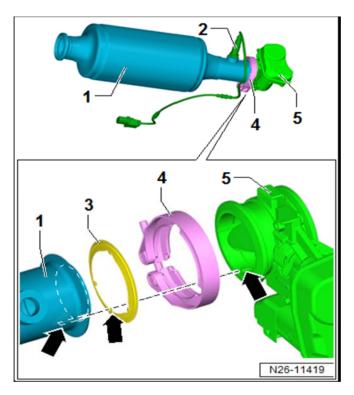


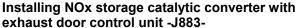
- Set exhaust gas recirculation filter with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.





 Position heat shield for right drive shaft, screw in bolts <1> and tighten to 25 Nm.



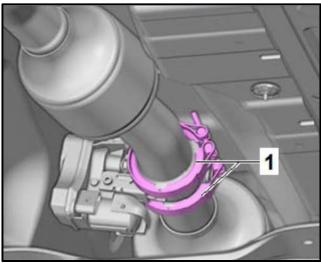


Screw oxygen sensor after catalytic converter
 -G130- <2> into NOx storage catalytic converter
 <1> and tighten to 52 Nm.

#### **NOTE**

The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

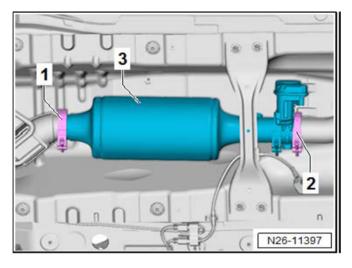
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.
- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.



- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps <1> so that they will not collide with underbody.

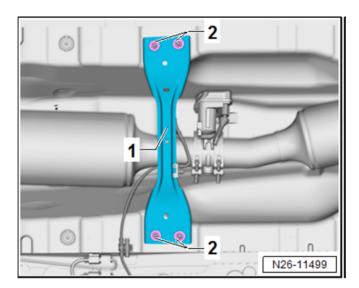
#### NOTE

Install clamps on the exhaust pipe before installing pipe into vehicle. Do not attempt to stretch clamps around pipe once installed, or clamps may fail to seal properly.

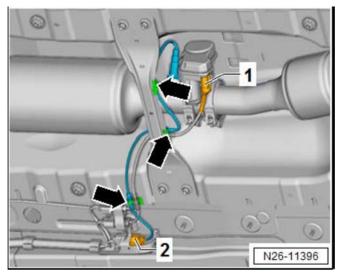


- Set clamp 1K0 253 725 B <2> in place and engage. Then tighten to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.

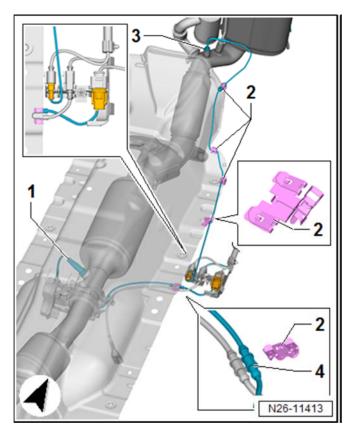




• Set front tunnel cross-piece <1> in place, screw on hexagon nuts <2> and tighten to 20 Nm.

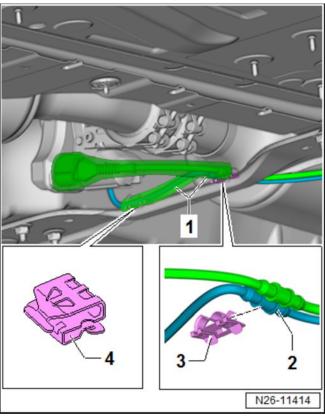


- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.

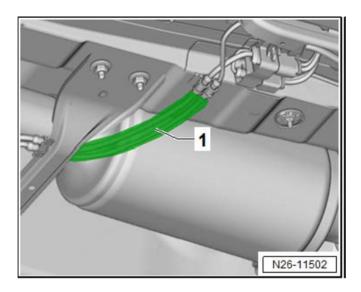


# Routing electrical wiring on underbody:

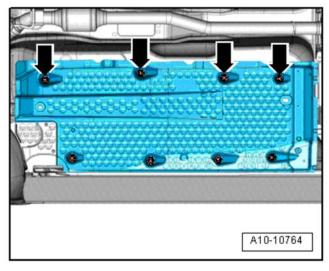
 Place electrical wiring from oxygen sensor after catalytic converter -G130- <1> and exhaust gas temperature sensor 4 -G648- <3> in clips <2> on heat shield as shown. Connect connector and secure in bracket.



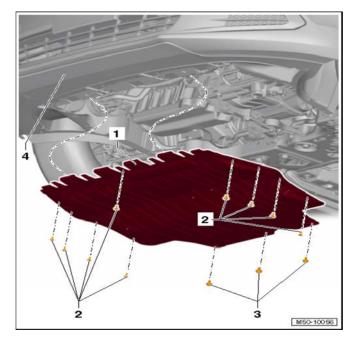
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



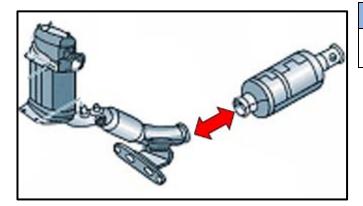
• Wrap new heat insulation mat <1> around wiring and close fasteners.



 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - o Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)



# **NOTE**

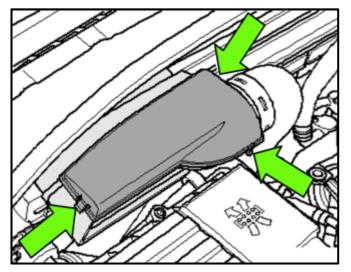
On one-piece DPF with NOx trap system, the NOx trap must be separated from the DPF.

 Separate NOx trap from DPF using -VAS6254-Chain Pipe Cutter (or equivalent).



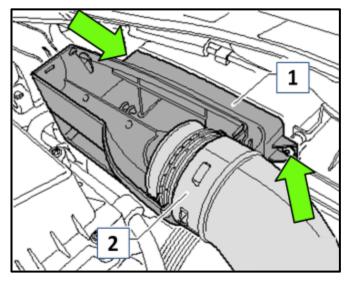
 Install the <u>RED</u> validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.



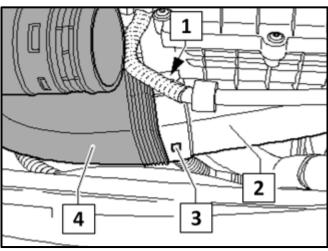


# **Check/Replace Glow Plug Control Module:**

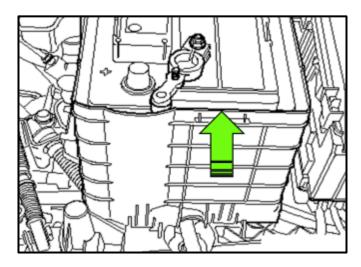
- · Switch ignition off and remove key
- Open hood.
- · Carefully remove engine cover.
- Release the tabs <arrows> and remove the cover on the air intake.



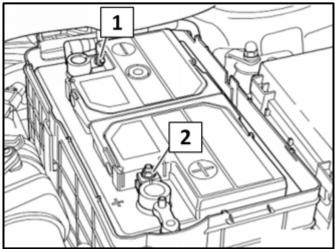
 Remove the screws <arrows> for the air intake guide <1> and pull the guide hose <2> out of the air intake guide <1>.



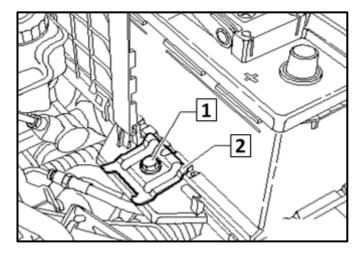
 Press the tabs <1 and 3> and remove the air guide hose <4> from the lower air filter housing <2>.



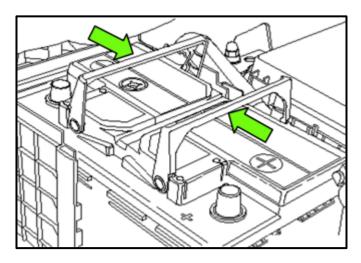
 Remove the battery cover in the direction of <arrow>.



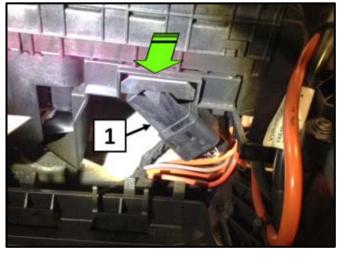
- Disconnect and isolate the ground cable <1> from the battery negative pole.
- Disconnect the positive cable <2> from the battery positive pole.



 Remove the bolt <1> and then remove the clamping plate <2>.



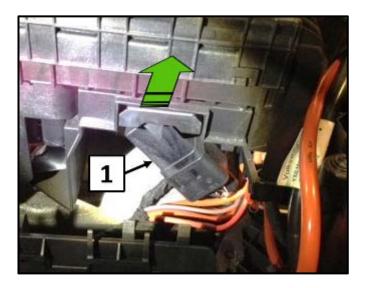
 Fold up the handles <arrows> and remove the battery.



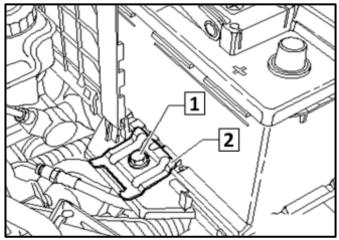
 To remove, slide the glow plug control module with bracket <1> outward from underneath the left engine compartment E-box in <direction of arrow>.



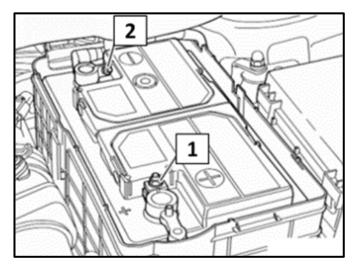
- Inspect, and if required, replace the glow plug control module based upon the part number.
  - If part number "03L 907 281 B" <arrow>
     is present, continue the work procedure
     and reinstall the glow plug control
     module.
  - If part number "03L 907 281 B" <arrow>
    is not present, you are required to
    replace the glow plug control module
    with part number 03L 907 281 B.
    - If the glow plug control module requires replacement, disconnect electrical connector, remove screw with bracket and reinstall onto new glow plug control module with part number 03L 907 281 B.



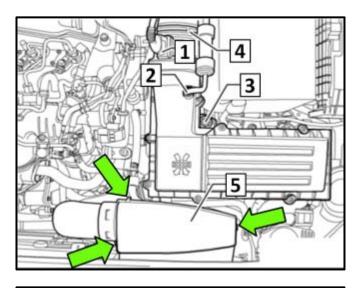
To reinstall, slide glow plug control module <1>
into position underneath left engine compartment
E-box <in direction of arrow>.



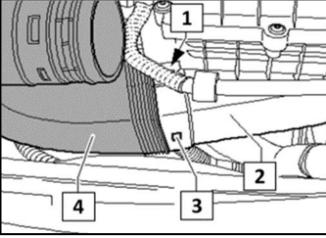
- Reinstall battery.
- Reinstall the clamping plate <2> with bolt <1> and torque to 20Nm.



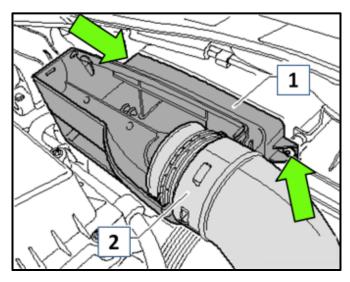
- First, reconnect positive cable to positive terminal on battery and torque screw <1> to 6Nm.
- Second, reconnect negative cable to negative terminal on battery and torque screw <2> to 6Nm.
- Reinstall battery cover.



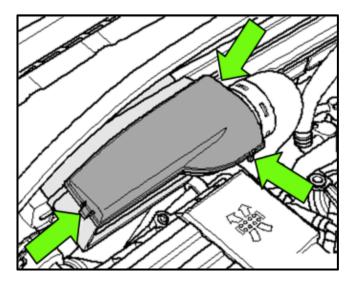
- · Reinstall the air filter housing.
- Tighten the bolt <3> for the lower air filter housing.
- Reinstall the air intake tube and close the clamp <4>.
- Reconnect the Mass Airflow Sensor -G70connector <1> and the vacuum line <2>.



 Reinstall the air guide hose <4> onto the lower air filter housing <2>.



 Reinstall the air intake guide <1> and air intake guide hose <2>, then tighten the screws <arrows>.



- Reinstall the cover on the air intake and secure tabs <arrows>.
- Reinstall engine cover.
- Switch on ignition.

#### TIP

The ASR/ESP Control Lamp –K155– will light up continuously until the vehicle is driven 15 to 20km/h. This will activate the Steering Angle Sensor –G85–.

- Connect Diagnostic Tester and clear faults.
- Disconnect Diagnostic Tester.
- Check and reset the clock.
- Completely open/close all power windows and set pinch protection.
- Perform function test of all electrical consumers.

**Proceed to Section F** 

#### Section F – Software Update Procedure (All Criteria)

#### **NOTE**

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- ✓ The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to
    do so may cause the update to fail, which could result in damage to the control module. Control
    modules damaged by insufficient voltage will not be covered.
- √ The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software
    update. Failure to do so may result in the tester powering off during the update, which could
    result in damage to the control module.
- ✓ If using the Bluetooth or WiFi transmitter head, it must be connected to the tester with a USB cable.

#### NOTE

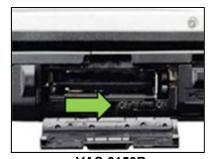
#### Using Bluetooth for this action is PROHIBITED!

Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

- Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
   It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



VAS 6150C (Left side behind SC/EX door)

#### **WARNING**

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

#### **TIP**

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions*.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

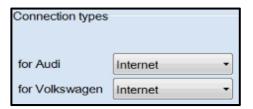
Things to check before starting Software Version Management (SVM):

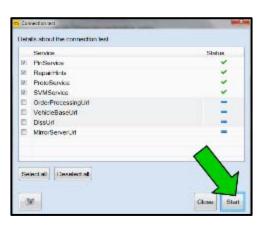
✓ Check and confirm that you have a LAN connection <arrow>.

✓ Within the Connection Tab, verify that the Connection type(s) display "Internet" <as shown>.

√ Start a connections test <arrow> and verify that all connections pass.











Note Company UPONTS Technical References 

Note Company 

Pro Delivery Testing 

VCCA 
Voltack 

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- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- · Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150X Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.

#### **NOTE**





All TDI flashes <u>MUST</u> be completed during a single, standalone ODIS Diagnostic Session. You <u>MUST</u> fully complete this campaign and send all GFF Paperless logs before beginning any other campaigns or operations. You <u>MUST</u> also conclude any other campaigns or operations that have been started and end the corresponding diagnostic session and send all GFF Paperless logs before beginning this operation. Failure to independently separate the ODIS diagnostic session for this campaign will cause problems updating the FAZIT server in Germany and will delay if not negate the payment of the emissions modification.

#### **IMPORTANT!**

If there are any ODIS "Hot-Fix" patches installed, they <u>MUST</u> be removed from the scan tool before beginning this operation. ODIS "Hot-Fix" patches may affect the flash process.

- At this time, refer to the "Alerts" section of ServiceNet <arrow> to verify that the most recent version of ODIS Software is loaded to the VAS6150X Diagnostic Tester (or equivalent). Failure to flash the vehicle using the most recent version of ODIS Diagnostic Software will cause faults in certain features of the flash operation.
- Failure to validate the ODIS Diagnostic version before flashing the vehicle may result in flash failure, and may delay if not negate the payment of the emissions modification.









- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.

#### **NOTE**

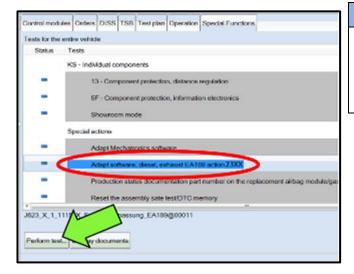
For the duration of the flash, the following is required to keep the BUS system active during the flash process:

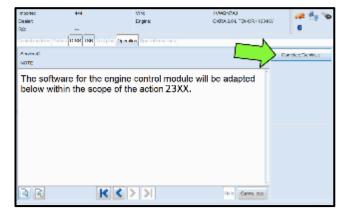
- Driver side door open
- Doors unlocked
- Hazzard flashers in the "On" position
- It is imperative that these steps are followed so the BUS system stays active throughout the flash process. Failure to follow these these instructions will result in lack of identification of all applicable control modules, and WILL result in a flash failure.

#### **NOTE**

#### **KESSY Vehicles!**

- If loss of communication between the reader coil and the key occurs during the flash, it may damage a control module.
- If equipped with a removable reader coil cap, it is REQUIRED to remove the reader coil cap and insert the key into the reader coil, or secure the key in close proximity to the reader coil throughout the flash process.
- If the reader coil cap is not removable, it is REQUIRED to secure the key to the steering column in close proximity to the reader coil using a residue-free adhesive or tape, an elastic cloth or stretch bandage, or other improvised retaining device.





#### **NOTE**

#### RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- Once the GFF scan is complete, verify that the ECM, TCM, and BCM are properly identified. (EXCEPTION: No BCM flash is applicable for 2009 Jetta, and Beetle/Beetle Convertible.)
  - If all applicable modules have not been identified, right click on the module not identified and select "Identify Control Module".
  - Failure to identify all applicable control modules before the flash process WILL result in a flash failure.
- Once all modules have been identified, select "Special functions".
- Select the test plan "Adapt software, diesel, exhaust EA189 action 23XX" <as shown>.
- Select "Perform test" <arrow>.

#### NOTE

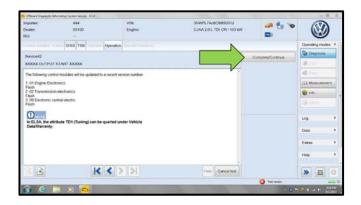
#### RISK of Improper Repair!

- DO NOT SELECT the normal test plan for "Adapting Software".
- ONLY SELECT the test plan "Adapt software, diesel, exhaust EA189 action 23XX" to perform this repair.
- Verify that all applicable control modules have been identified.
- Select "Complete/Continue" <arrow> after the control module adaptation, action 23XX note appears.



# ## Officer Separate National Life Separate L



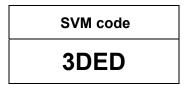


#### NOTE

#### Using Bluetooth for this action is PROHIBITED!

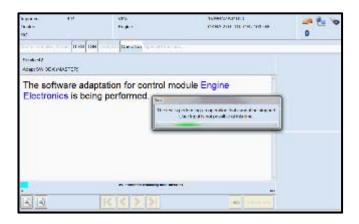
Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

 Enter the corrective action code (SVM code) as listed below.



- Select "Accept" <arrow>.
- After selecting "Accept", a self-check routine that tests the integrity of the Heated Oxygen Sensor -G39- occurs in the background. This self-check is automated and requires no input to initiate.

- You may receive the message "Replace the heated oxygen sensor -G39- (before catalytic converter), Refer to the Repair Manual, Repair Group 23" <arrow 1>:
  - If Campaign 24CV has NOT been completed, STOP and perform that action at this time. When complete, return to the beginning of Section F to restart the flash process.
  - If Campaign 24CV has been completed, select "Complete/Continue" <arrow 2> to bypass this operation and proceed to the next step.
- Select "Complete/Continue" <arrow> to begin the software update process.



• Observe flash process and follow any on-screen prompts to complete the test plan.

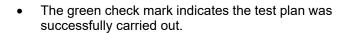


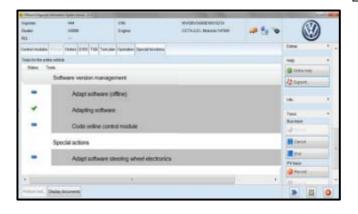
- Follow all prompts as requested per the test plan.
  - Switch the ignition ON or OFF when requested to do so.
  - Select "Complete/Continue" <arrow> when prompted to do so.



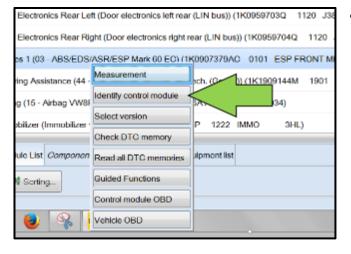
#### **NOTE**

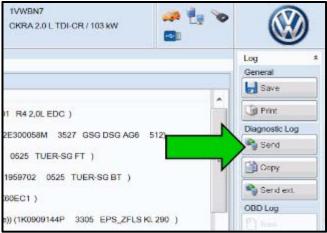
- It is <u>IMPERATIVE</u> that <u>ALL</u> of the ignition cycle on/off delay requests are fulfilled in their entirety during this flash process <arrow 1>.
- Failing to wait for the ignition on/off timing cycle to complete (progress bar and countdown timer <arrow 2>) before cycling the ignition on/off MAY damage a control module.
- Damage to control modules as a result of failing to wait the specified time displayed by the progress bar and countdown timer
   <arrow 2> are <u>NOT</u> covered under this action.











#### **NOTE**

#### In the event of a Flash Malfunction!

In the event of a flash error or malfunction, **STOP**. **DO NOT** exit the ODIS session, disconnect the scan tool, attempt the flash again, or continue further in the test plan.

Create a VTA ticket and allow the VW Technicians Helpline to provide direction with flash failures.

- For vehicles that successfully complete the flash operation:
  - Proceed to the next step.
- In the event of a flash failure due to Mechatronic (TCM) software that per VTA assistance requires a Mechatronics replacement:
  - Proceed to Section G and replace the Mechatronic unit.
  - After the Mechatronic unit has been replaced, you will be directed to return to the beginning of Section F to restart the Software Update Procedure.
- After the software update is completed and before sending the GFF Log Online:
  - Select the "Control Module" tab.
  - Scroll down and right click on Address Word 0001/ Engine Control Module.
  - Select "Identify Control Module" <arrow>.

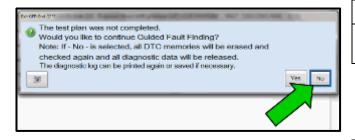
 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

#### NOTE

#### RISK of Non-payment!

- Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.
- Verify that no other Campaigns or operations are performed during this ODIS diagnostic session before sending the log, and verify that the Engine Control Module has been reidentified.

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Volkswagen dealer. ©2017 Volkswagen Group of America, Inc. All Rights Reserved.





#### **TIP**

Technicians may find it helpful to also store the log on a USB stick for back-up.

#### TIP

When exiting GFF, it is important to select "No" <arrow>.

#### **TIP**

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

- If TPMS light illuminates, follow test plan "03 – Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- End the diagnostic session fully, exit the scan tool, and disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform test drive.

#### **NOTE**

**<u>DO NOT</u>** drive vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

#### **Proceed to Section H**

Section G – Replace Mechatronic Unit for dual clutch gearbox, Criteria 02 Model Year 2009, ONLY if required per VTA assistance

#### **Required Tools**



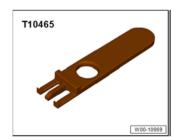
Torque wrench -V.A.G 1331-(or equivalent)



Used oil collection and extraction unit -V.A.G 1782-(or equivalent)



Adapter for filling oil -VAS 6262 A-

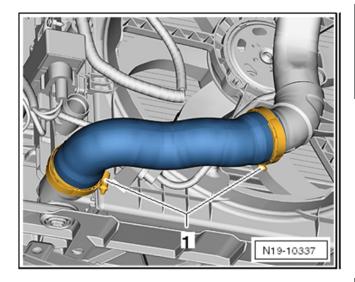


Release tool -T10465-

#### **Mechatronic Replacement Instructions**

#### General information about removing Mechatronic unit with gearbox installed:

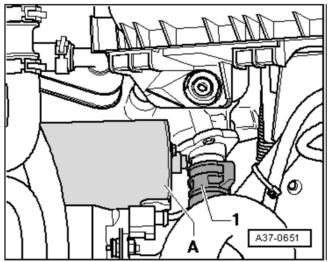
- Always make sure that no dirt can enter an "open" gearbox.
- Dirt or contaminants entering an "exposed" mechatronic unit for dual clutch gearbox -J743- and/or oil pump can lead to gearbox failure.
- Please refer to the notes on the oil filter change regarding "dirty oil".
- The mechatronic unit can stick on the dowel pins when the gearbox is very warm. Then let the gearbox cool off, and only remove/install a mechatronic unit into the gearbox when cooled to ambient temperature.
  - Move selector lever to position "P".
  - Disconnect battery ground connection.
  - Remove underbody noise insulation.



#### **NOTE**

It may be necessary to remove additional components not listed in these repair instructions to create enough space to remove the Mechatronic unit based on the particular vehicle configuration.

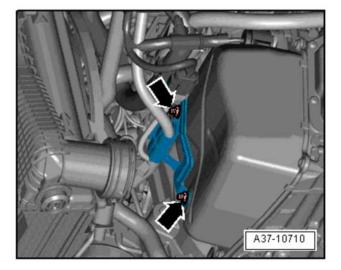
- Remove connecting hose between charge air cooler and charge air pipe.
- If required for additional clearance; remove engine cooling fan support, air conditioning lines, electrical harnesses and bracketing, or other components as necessary.



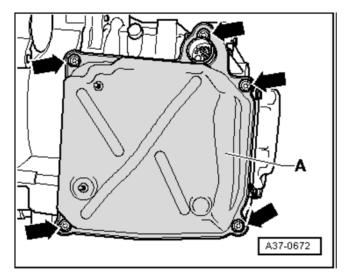
#### NOTE

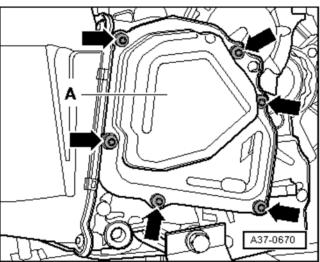
Risk of damaging mechatronic unit for dual gearbox -J743- beyond repair through static discharge.

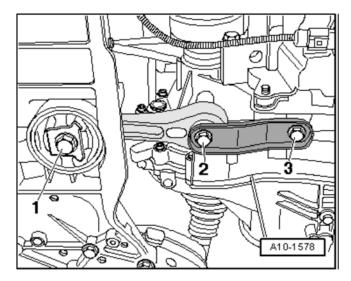
- Do not touch the contacts in the connector of the mechatronic unit for dual clutch -J743- by hand
- Electrostatically discharge by touching a grounded object by hand (without gloves).
- Release locking mechanism of connector <1> for mechatronic unit by turning it in counterclockwise direction, then and pull off the connector.



- Remove electrical wiring and retainer bracket from gearbox cover at front <arrows>.
- Raise the lines near the cover and secure them out of the way with a tie strap, or equivalent.







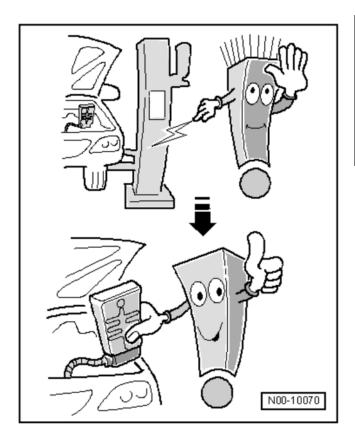
- Position used oil collection and extraction unit -V.A.G 1782- under gearbox in area of "large" cover.
- Loosen bolts <arrows> of gearbox cover in diagonal sequence and remove. Hold cover when doing this.
- Allow oil to drain out and then remove cover with seal

#### NOTE

Approximately 3 liters of oil will drain from the unit. The "small" oil pump cover, as well as the gasket and the bolts of the gearbox cover must always be replaced when installing the new Mechatronic unit.

 Remove oil pump cover <A> by removing bolts <arrows>.

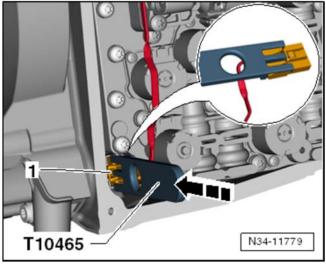
• Disconnect the pendulum support to gearbox by removing bolts <2 and 3>.



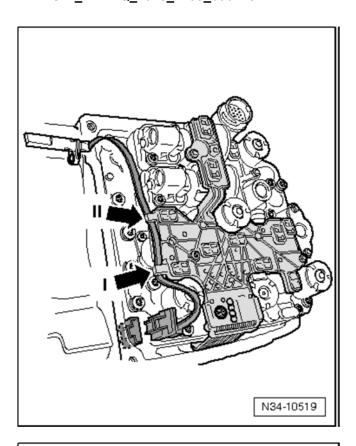
#### NOTE

Risk of damaging mechatronic unit for dual gearbox -J743- beyond repair through static discharge.

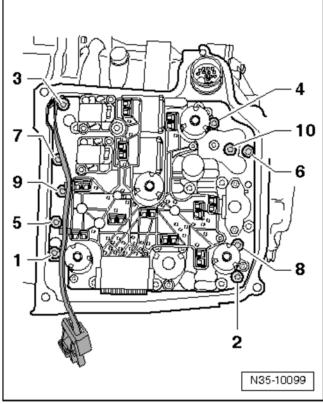
- Do not touch the contacts in the connector of the mechatronic unit for dual clutch -J743- by hand.
- Electrostatically discharge by touching a grounded object by hand (without gloves).



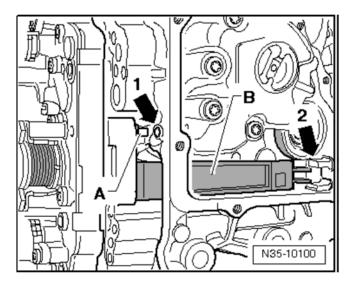
- Release connector <1> of gearbox input speed sender -G182- and clutch temperature sender -G509- using release tool -T10465-.
- Carefully pull off the connector.



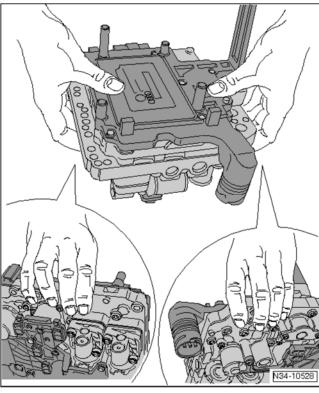
 First, pull the line out of lower clip <arrow I>, then remove it from upper clip <arrow II> and lay to side. Use caution when removing to not kink line.



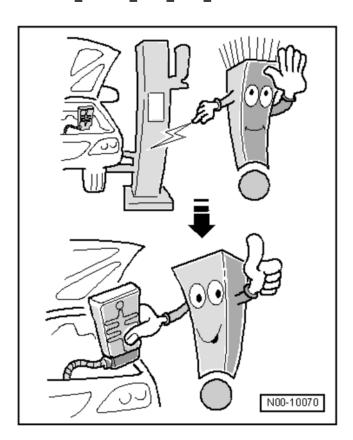
Loosen and remove the securing bolts
 1 through 10> in the sequential order given in the image to the left.



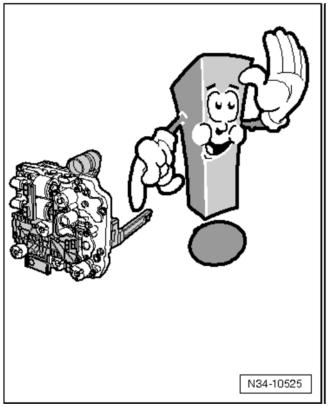
- Carefully pull mechatronic unit out of gearbox housing so that sender arm <B> on back is no longer in gearbox housing.
- When handling mechatronic unit, pay special attention to the "long" sender arm <B>.
- Carefully swing mechatronic unit for dual clutch gearbox -J743- downwards.



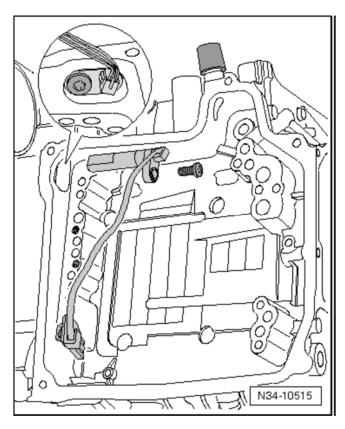
- Set mechatronic unit to the side properly.
- Never lift mechatronic unit on "sender arm" or lay it on arm.



• Before touching the new mechatronic unit, touch a grounded object (without gloves).

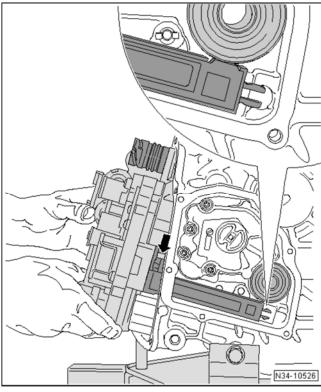


• If "arm" is damaged, mechatronic unit must be replaced.

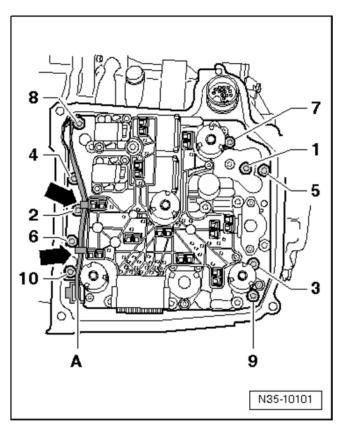


#### NOTE

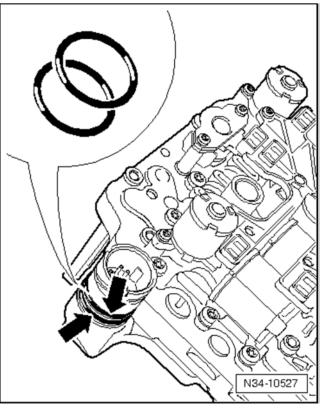
- Mechatronic unit for dual clutch gearbox -J743and gearbox should be at same temperature. This stops pins from "jamming" during insertion.
- Before installation of mechatronic unit, make certain that gearbox input speed sender
   -G182- with oil temperature sender in multiplate clutch -G509- is installed.
- Do not pinch wiring.



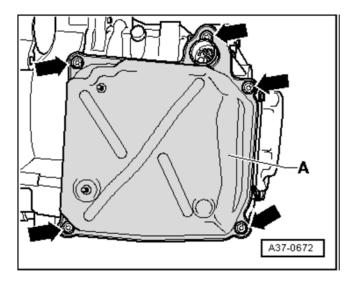
- Carefully place mechatronic unit on dowel pins <arrow> of gear housing. Ensure that "sender arm" locates and locks into position <inset image>.
- Hold mechatronic unit upwards for this purpose, as shown.
- Sender arm is not allowed to strike the sender wheel.
- Verify that the mechatronic unit has made contact correctly before continuing.



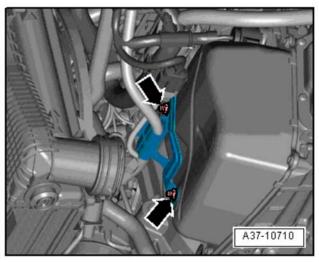
- Screw in new bolts in the numerical sequence shown <1 through 10> in order until hand-tight.
- Tighten bolts in the numerical sequence shown <1 through 10> to 5 Nm + 90° (1/4 turn) further.
- Attach wiring harness with connector <A> first in upper retaining lug, and then in lower <arrows>.
- Push in on the connector <A> until it is fully engaged.



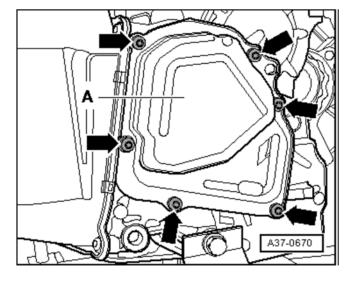
- Apply a thin coat of dual clutch gearbox oil to the new O-rings on the Mechatronic unit.
- Replace the seal on the gearbox cover.
- Clean the sealing surface on gearbox.
- Ensure proper seating of seal.



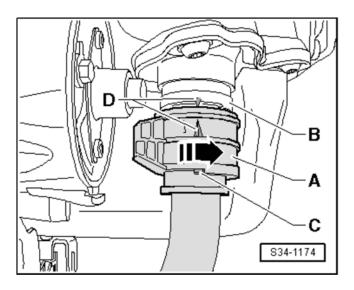
- Place gearbox cover <A> over mechatronic unit, ensuring that no wiring is pinched or trapped in the process.
- Insert new bolts <arrows> and tighten diagonally in several stages to 10 Nm.



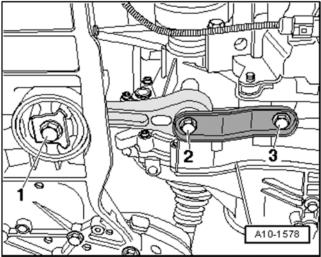
- Fit cable retainer to gearbox cover and tighten nuts <arrows> to 10 Nm.
- Reinstall any hoses, lines, or wiring harness connections that were relocated during disassembly to their original position, and tighten all fasteners securely as required to the proper torque specification.



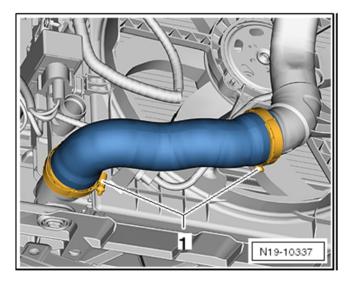
 Set new oil pump cover <A> in place and tighten bolts <arrows> diagonally in several stages to 8 Nm.



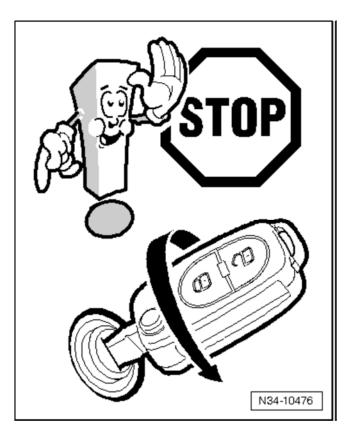
- Fit connector <A> of mechatronic unit for dual clutch gearbox -J743- as follows:
- Arrows <D> on mechatronic unit <B> and connector <A> and also lug <C> must all be in line.
- Carefully fit connector <A> as far as it will go and turn the locking mechanism in clockwise direction to lock <direction of arrow>.



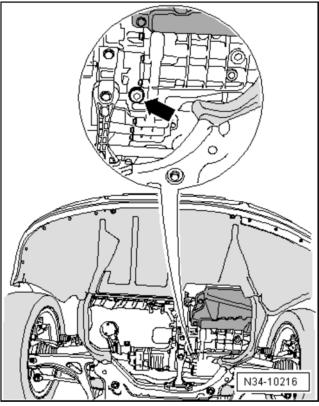
 Connect pendulum support to gearbox using new bolts and tighten to 40 Nm + 90 degrees (for grade 8.8 bolts), or 50 Nm + 90 degrees (for grade 10.9 bolts).



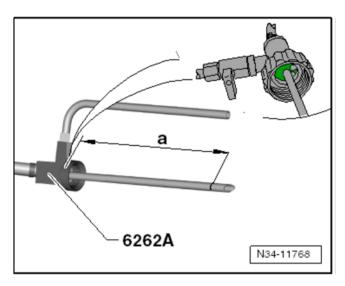
- Reinstall connecting hose between charge air cooler and charge air pipe.
- Reinstall any parts which may have been removed from the vehicle.
- Reconnect the battery, making sure to following all proper procedures for battery connections.



- Do not start engine!
- If required due to fluid contamination, replace the oil filter.



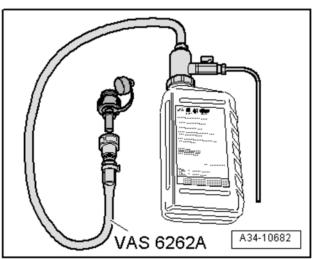
 Remove oil drain plug close to pendulum support <arrow>.



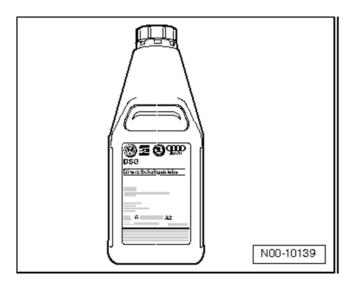
- Before screwing adapter for oil filling
   -VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension <a> and shorten if required.
  - Dimension <a> = 210 mm

#### NOTE

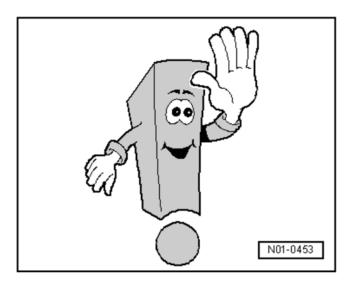
The dimension <a> is measured from the shaft (green area in the inset image) of the adapter for oil filling -VAS 6262 A-.



Screw adapter of adapter for filling oil
 -VAS 6262 A- hand tight into inspection hole.



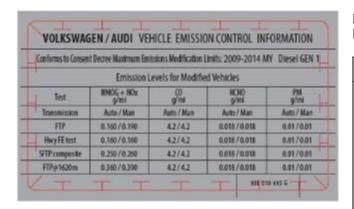
- Shake oil bottles before opening them.
- Screw on oil filler adapter -VAS 6262 A- onto oil bottle.
- Fill the gearbox with three (3) liters of oil.
- To change bottle, shut off tap or hold adapter for filling oil -VAS 6262 A- higher than gearbox.
- Start the engine and check and continue to replenish oil until filled to specification. Adapter for filling oil -VAS 6262 A- remains installed initially.
- Check oil level and top off as required.



- Fluid Level Checking Requirements:
  - The vehicle is level and all hoist mounts are the same height.
  - The noise insulation has been removed.
  - The Vehicle Diagnostic Tester is connected.
  - To begin working, the oil temperature should not be higher than 45 °C (113 °F).
  - Test temperature: 35 to 45 °C (95 to 113 °F).
- Checking Fluid Level:
  - Connect the Vehicle Diagnostic Tester and identify the vehicle in Guided Functions.
  - o Select DSG® Transmission.
  - o Select Check Fluid Level.
- Install the oil drain plug with new gasket and tighten to 45 Nm.
- Reinstall noise insulation underbody panel.
- Conduct basic adjustment of mechatronic unit for dual clutch gearbox -J743-.

Proceed to Section F to perform the flash operation.

#### Section H - Supplemental Vehicle Emissions Control Information Label



#### 03L 010 005 G





# Install Supplemental Vehicle Emissions Control Information Label

#### TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.
- Open the hood.
- Clean the surface where the label is to be installed <circled areas are examples>.
- Install the supplemental Vehicle Emissions Control Information label, 03L 010 005 G, according to the following guidelines:
  - Painted surface
  - In a readily visible position on the underside of the hood
  - In as close proximity to the original VECI label as possible
  - In as close proximity (for picture purposes) of the Campaign Completion Label

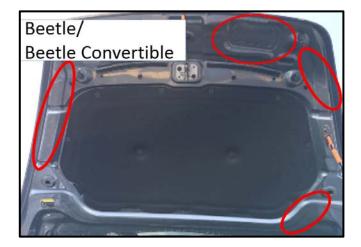


#### **NOTE**

#### DO NOT Cover existing VECI label!

New Vehicle Emissions Control Information (VECI) label MUST NOT be placed over original VECI label.

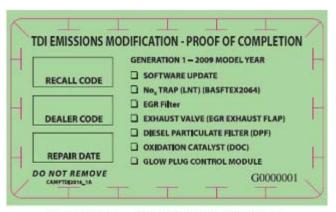
#### **Proceed to Section I**



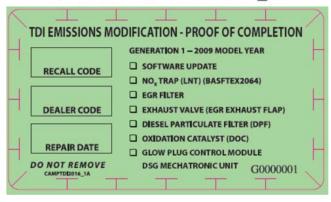
The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Volkswagen dealer. ©2017 Volkswagen Group of America, Inc. All Rights Reserved.

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#### Section I - Campaign Completion Label



MY 2009 - CAMP TDI 2016\_1A



MY 2009 - CAMP TDI 2016\_1D



MY 2010-2014 - CAMP TDI 2016\_1B

#### **Install Campaign Completion Label**

#### **TIP**

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Photo documentation of label installed is required.
- Clean the surface next to the Vehicle Emission Control Information Label where the TDI Emissions Modification – Proof of Completion Label is to be installed.
- Fill out completely the Recall Code, Dealer Code, Repair Date, and install the TDI Emissions Modification – Proof of Completion Label, part number:
  - o MY 2009 vehicles: CAMP TDI 2016\_1A
  - MY 2010-2014 vehicles: CAMP TDI 2016\_1B

#### **NOTE**

Place the label next to the Vehicle Emission Control Information Label.

- Apply clear overlay (provided)
- Close the hood.



Proceed to Section J (California only).

Proceed to Section K (All without California).

#### Section J - California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

#### TIP

Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV *only upon request*.

#### Proceed to Section J

#### Section K – Service Modification Documentation Requirements



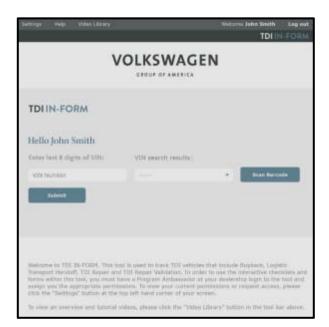
#### Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

#### TIP

To access the interactive forms go to the TDI Settlement Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

Enter the "TDI IN-FORM" tool <arrow>.



 Enter the VIN for the vehicle that requires documentation.

#### TIP

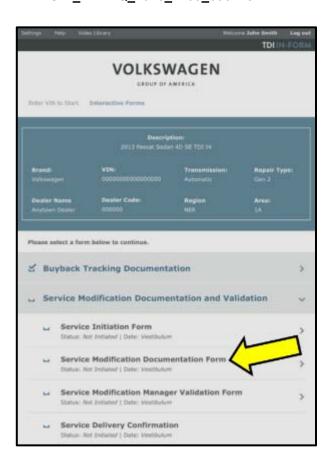
The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.

#### TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.



- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.

#### **NOTE**

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

#### **TIP**

Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

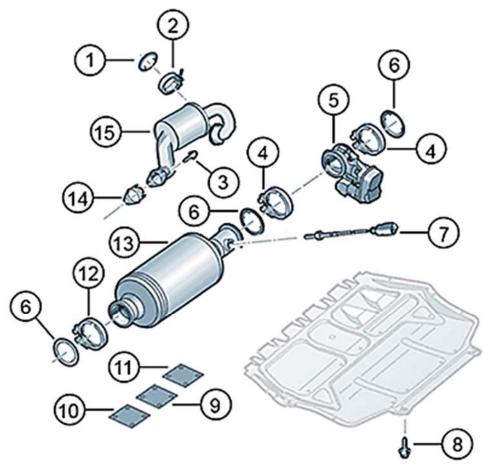
#### ALL WORK IS COMPLETE for this Repair.

#### **NOTE**

At this time, refer to ELSA and address any additional open campaigns/recalls. If the 24CV Campaign has not yet been completed, refer to that action at this time. It is required to complete the 24CV Campaign **PRIOR** to this action in order to complete the TDI IN-FORM Tool requirements.

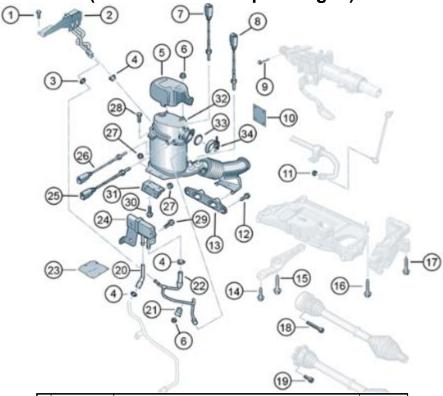
#### Appendix A - Parts Kits Identification and Details

### Criteria 01 and 02 - 2.0L Base Kit 1 - 1K0 298 101 A (All Vehicles)



#	Part	Name	Quantity Required Per Vehicle
1	1K0253115AG	Seal	1
2	1K0253725F	Clamp	1
3	N10642103	Bolt (M8x25)	2
4	1K0253725B	Clamp (narrow)	2
5	1K0253691J	Exhaust door control unit -J883-	1
6	1K0253115AE	Seal	3
7	03L906262N	Oxygen sensor after catalytic converter -G130-	1
8	1K0825951	Bolt self-locking (M6x20)	3
8	WHT000729A	Bolt self-locking (M8x20)	
9	1K0971461D	Heat shield (Cable for Exhaust door control unit –J883-)	
10	1K0971461E	Heat shield (Cable for Oxygen sensor –G130-)	1
11	1K0971461F	Heat shield (Cable for Oxygen sensor and Exhaust door control unit)	1
12	1K0253725	Clamp	1
13	1K0254402AX	NOx storage catalytic converter	1
14	03G131547H	Seal	1
15	1K0253120B	Exhaust gas recirculation filter	1

# Criteria 01 ONLY - 2.0L Base Kit 2 - 1K0 298 101 X (2009 Jetta/Jetta SportWagen)



#	Part	Name	Quantity Required Per Vehicle
1	N90737105	Bolt	1
2	1K0131552B	Differential pressure sender -G505-	1
3	3C0131483A	Spring clamp	3
4	4B0422379	Spring clamp	1
5	5N0131783	Heat shield	1
6	N02300215	Nut M6	4
7	03L906262B	Oxygen sensor -G39-	1
8	03L906088EG	Exhaust gas temperature sender –G648-	1
9	N01033513	Bolt for U-joint	1
10	5N0971461	Heat shield	1
11	N0150816	Nut	2
12	N10240003	Bolt (M8x32)	2
13	1K0253144BC	Exhaust system bracket	1
14	N91066101	Bolt (M10x35)	1
15	N91167101	Bolt (M10x75)	1
16	WHT000431A	Bolt M12x110	2
17	N91039802	Bolt M12x90	4
18	N90991102	Bolt (M10x52) - Manual Transmission	6
19	N90991002	Bolt (M10x23) - DSG Transmission	6
20	03G131525	Hose for control line	1
21	1K0131649	Retainer	1
22	1K0131552A	Control line	1
23	1K0971461C	Heat shield	1
24	076906051A	Exhaust pressure sensor 1 -G450-	1
25	03L906088T	Exhaust gas temperature sender – G448-	1
26	03L906088J	Exhaust gas temperature sender – G495	1
27	N01508315	Nut M8	4
28	N10653102	Bolt	1
29	N10456201	Bolt M6x25	1
30	N90786502	Bolt	2
31	1K0253463AF	Bracket	1
32	1K0254708GX	Particulate filter	1
33	04L253115A	Seal	1
34	1K0253725	Clamp	1

From: <u>MacCuish, Logan</u>

To: <a href="VW-Settlement">VW Settlement</a>; "eescdcopy.enrd@usdoj.gov"; "Kiyota, Diane@ARB"; "Kamel, Alexandra@ARB";

"nicklas.akers@doj.ca.gov"; "judith.fiorentini@doj.ca.gov"; "david.zonana@doj.ca.gov"

Cc: Kaul, Meetu; Iddings, Brianna; "Giuffra Jr., Robert J."; "Oswell, Laura Kabler"; "Murtagh, Michael P."; Nakayama,

Granta; Sauers, William; Wulfert, David

**Subject:** Re: DJ # 90-5-21-1-11386

**Date:** Wednesday, February 07, 2018 10:17:08 AM

Attachments: 23U3 VW TDI GEN1 Emissions Recall Circular (updated).pdf

#### Counsel,

On behalf of Settling Defendants, we hereby resubmit Settling Defendants' revised 2.0 liter Generation 1 dealer repair instructions. This version reflects the changes that we sent by email on January 31, 2018. These repair instructions supplement the Approved Emissions Modification for certain Generation 1 vehicles, and supersede the repair instructions provided in Settling Defendants' December 5 and 28, 2017 Generation 1 Re-Submission. As with Settling Defendants' previous emissions modifications submissions, these materials should be treated as confidential business information and trade secret and therefore exempt from disclosure under the California Public Records Act and the Freedom of Information Act.

Please let us know if you have any questions.

Thanks, Logan

Logan MacCuish KING & SPALDING LLP 633 W. 5th St., Ste. 1700 Los Angeles, CA 90071

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Imaccuish@kslaw.com

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# Emissions Recall Code: 23U3

Draft 02/05/2018

**REVISION** 

Subject

2.0L TDI Engine (GEN 1) Emissions Modification – <u>USA ONLY</u>

**Release Date** 

February XX, 2018

#### **Revision Summary**

#### **Updated work instructions:**

- Updated TDI Proof of Completion Labels with accompanying installation instructions for 2009 MY vehicles requiring Mechatronics Unit replacement and 2010 MY vehicles with one-piece DPF/NOx traps.
- Special instructions under Criteria 02 for repairing certain 2010 MY vehicles that may be equipped with one-piece DPF and Lean NOx Traps.
- Special instructions under Criteria 01 for repairing certain 2009 MY vehicles that may require replacement of the Mechatronics Unit.

## Important Repair Information!

#### CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

Over the next few weeks there will be updates made to ODIS and the campaign circular. Do not retain any hard copies of campaign circulars – only refer to the electronic copies posted to Elsa and ServiceNet.

#### **Affected Vehicles**

#### U.S.A. ONLY: 2009-2014 MY Volkswagen 2.0L TDI (Gen 1)

	Country	Model Year	Vehicle Carline
l	USA	2009-2014	Jetta
l	USA	2009-2014	Jetta SportWagen
l	USA	2013-2014	Beetle
	USA	2013-2014	Beetle Convertible
	USA	2010-2014	Golf

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the <u>only</u> valid campaign inquiry & verification source.

- ✓ Campaign status must show "open."
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

#### **Problem Description**

The Environmental Protection Agency and California Air Resources Board have determined that Volkswagen vehicles equipped with a 2.0L 4-cylinder TDI engine do not comply with applicable emissions regulations. The emissions control systems on the vehicles will not control emissions under off-cycle conditions as effectively as during the federal test procedure. The extent of the emissions increase under off-cycle conditions depends upon how the vehicles are driven.

#### **Corrective Action**

Install updated emissions control system parts and software, install a TDI Emissions Modification – Proof of Completion Label and install a Supplemental Vehicle Emissions Control Information Label.

If the vehicle has been modified by the customer prior to receiving the emissions modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions- related parts, or modifications to the ECU or computer software of the vehicle), Volkswagen may not be able to perform the emissions modification until the customer corrects such modification.

#### **Parts Information**

**03L907281B (Glow Plug Control Module):** Due to the low replacement rate, part # 03L907281B will not be allocated. If this part is needed to support scheduled vehicle repair,

February 2018 23U3 Page 1 of 91

submit your request with VIN to vwoaspecialservices@vw.com.

**1K0-298-101-A (Base Kit 1), 1K0-254-402-AX (NOx Catalyst), 1K0-298-101 –X (Base Kit 2):** Parts will be allocated prior to owner notification. If allocated parts have been used and your dealership is at the weekly Upper Order Limit, please submit the backordered sales document number to <a href="mailto:upperorderlimits@vw.com">upperorderlimits@vw.com</a> to have additional parts released.

**02E325025ATZF3** (Mechatronic Unit): Due to the low replacement rate, part # 02E325025ATZF3 will not be allocated and will be placed on Techline block. If this part is needed to support scheduled vehicle repair, contact the VW Technicians Helpline for part release, and submit your request with VIN and VTA Case Code to VW Parts Special Services.

#### **Code Visibility**

On or about August 11, 2017, this campaign code showed open and available for repair on affected vehicles in Elsa.

On or about August 11, 2017, affected vehicles were identified and open for repair with this campaign code in the VIN Lookup tool at www.vw.com.

#### **Owner Notification**

Owner notification took place on August 05, 2017.

# Loaner/Rental Vehicle – REQUIRED!

To remain compliant with the Settlement Agreement, Service Consultants <u>must</u> complete a Loaner/Rental label and it <u>must</u> be signed by the customer. This documents each customer's decision to accept or decline the offer for a loaner or rental vehicle while the Approved Emissions Modification was being performed on their vehicle.

	to use while whicle.	that I was offered the TDI Emissions R	
to:	Accept	Decline	
Custome	r Name(Print)	:	
Custome: Signatu	_		
Date:			

Affix the completed label to the Repair Order and follow the new photo documentation requirements for this label in the IN-FORM tool.

### Emissions Campaigns Requirements (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU). Order certificates online via the Compliance Label Ordering portal at <a href="https://www.vwhub.com">www.vwhub.com</a>.

### **Additional Information**

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Fill out and affix the appropriate TDI Emissions Modification – Proof of Completion Label and the appropriate Supplemental Vehicle Emissions Control Information Label after work is complete. Additional shipments will be released based on the volume of completed repairs claimed through SAGA. The parts will not be available for order through the website at this time.

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#### **Claim Entry Instructions**

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action <u>open on the day of repair</u> to the repair order.

If customer refused campaign work:

· ·	✓ U.S. dealers: Submit request via WISE under the <i>Campaigns/Update/Recall Closure</i> option.				
Service Number	23U3				
Damage Code	0099				
Parts Vendor Code	wwo				
Claim Type	Sold vehicle: 7 10				
Ciaiii Type	Unsold vehicle 7 90	1			
Causal Indicator	Mark Base Kit I as				
		•			
Vehicle Wash	Do not claim wash	under this action.			
Loaner/Rental Vehicle	Customers are eligi	ble to receive a loaner/re	ental vehicle.		
Criteria I.D.	01				
	Install <u>Base Kit I and Base Kit II components</u> , install NOx catalyst, install glow plug control module, and *install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.  Labor operation: 2674 19 99 470 T.U.				
	Quantity	Part number	Description		
	1.00		Base Kit I*		
	1.00		NOx Catalyst		
	1.00		Base Kit II		
	1.00 (if required)	03L907281B	Glow Plug Control Module		
	AND				
	Connect battery cha	arger.			
	Labor operation: 27	706 89 50 1	0 T.U.		
	AND				
	Connect vehicle dia	agnostic tester, perform s	oftware update for control unit.		
	Labor operation: 23	60 22 99	Time state on diagnostic protocol		
			(Maximum 70 T.U.)		
	AND				
	Follow IN-FORM tool app.				
	Labor operation: 01	83 00 99	20 T.U.		
	AND Only if Required Replace Mechatronics unit.				
	Labor operation: 3877 19 00 220 T.U.				
	Quantity	Part number	Description		
	1 (if required)	02E 325 025 AT ZF3	Mechatronic Unit		
	1 (if required)	02E 321 371 E	Gasket		
	10 (if required)	N 10554005	Round Headed Screw		
	5 (if required)	N 91032702	Screw, button head with collar		
	Continued on next page:				

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--AND Only if Required--

Connect vehicle diagnostic tester, perform software update for control unit.	
Labor operation: 2360 25 99	Time stated on diagnostic protocol
	(Maximum 70 T.U.)
Labels are sent free of charge. They cannot be charged to this campaign.	

#### Criteria I.D. 02

Install <u>Base Kit I components</u>, install NOx catalyst, and \*install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.

#### Beetle Convertible ONLY

Quantity	Part number	Description
1.00	1K0298101A	Base Kit I*
1.00	1K0254402AX	NOx Catalyst

Labor operation: 2674 20 99 190 T.U.

--AND--

Connect battery charger.

Labor operation: 2706 89 50 10 T.U.

--AND--

Connect vehicle diagnostic tester, perform software update for control unit.

Labor operation: 2360 24 99 Time state on diagnostic protocol

(Maximum 70 T.U.)

--AND--

Follow IN-FORM tool app.

Labor operation 0183 00 99 20 T.U.

--OR--

### **ALL OTHER VEHICLES**

Quantity	Part number	Description
1.00	1K0298101A	Base Kit I*
1.00	1K0254402AX	NOx Catalyst

Labor operation: 2674 21 99 170 T.U.

--AND--

Connect battery charger.

Labor operation: 2706 89 50 10 T.U.

--AND--

Connect vehicle diagnostic tester, perform software update for control unit.

Labor operation: 2360 23 99 Time state on diagnostic protocol

(Maximum 70 T.U.)

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#### **Continued on Next Page:**

--AND--

Follow IN-FORM tool app.

Labor operation: 0183 00 99 20 T.U.

### --OR-- 2010 Jetta ONLY, ONLY if Required--

Install <u>Base Kit I and Base Kit II components</u>, install NOx catalyst, install glow plug control module, and \*install a supplemental Vehicle Emissions Control Information label and TDI Emissions Modification Label.

Labor operation: 2674 19 99 470 T.U.

Quantity	Part number	Description
1.00	1K0298101A	Base Kit I*
1.00	1K0254402AX	NOx Catalyst
1.00	1K0298101X	Base Kit II
1.00 (if required)	03L907281B	Glow Plug Control Module

#### --AND--

Connect battery charger.

Labor operation: 2706 89 50 10 T.U.

--AND--

 $\label{thm:connect} \textbf{Connect vehicle diagnostic tester}, \textbf{perform software update for control unit}.$ 

Labor operation: 2360 26 99 Time state on diagnostic protocol

(Maximum 70 T.U.)

--AND--

Follow IN-FORM tool app.

Labor operation: 0183 00 99 20 T.U.

Labels are sent free of charge. They cannot be charged to this campaign.

# - LOANER/RENTAL MUST BE CLAIMED ON A SEPARATE LINE -DO NOT PUT ON CAMPAIGN CLAIM

#### LOANER/RENTAL

Claim Type: A1A
Service #: CU01
Damage Code: 0010
Removed Part : MOB

Outside LO Number: CU010000

DO NOT PUT LOANER/RENTAL ON CAMPAIGN CLAIM

# **Campaign Work Procedure**



Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

# **Required Parts**

Criteria	Quantity	Part Number	Part Description	
	1	1K0 298 101 A	Base Kit I	
	1	1K0 254 402 AX	NOx Catalyst	
	1	1K0 298 101 X	Base Kit II (Criteria 01 - MY 2009 only)	
	1 (if required)	03L 907 281 B	Glow Plug Control Module	
	1	03L 010 005 G	Vehicle Emissions Control Information Label	
	1	Camp TDI 2016 1A	TDI Emissions Modification Label (MY 2009 only)	
01	AND Only if Required			
	1 (if required)	02E 325 025 AT ZF3	Mechatronic Unit	
	1 (if required)	02E 321 371 E	Gasket	
	10 (if required)	N 10554005	Round Headed Screw	
	5 (if required)	N 91032702	Screw, button head with collar	
	Up to 5 (if required)	G 052182A2	1 liter bottle, DSG Gearbox Fluid	
	1 (if required)	Camp TDI 2016_1D	TDI Emissions Modification Label (MY 2009 w/ Mechatronic)	

Criteria	Quantity	Part Number	Part Description	
	1	1K0 298 101 A	Base Kit I	
	1	1K0 254 402 AX	NOx Catalyst	
	1	03L 010 005 G	Vehicle Emissions Control Information Label	
00	1	Camp TDI 2016 1B	TDI Emissions Modification Label (MY 2010-2014)	
02	AND Only if Required, ONLY 2010 Model Year			
	1	1K0 298 101 X	Base Kit II	
	1 (if required)	03L 907 281 B	Glow Plug Control Module	
	1	Camp TDI 2016_1C	TDI Emissions Modification Label (MY 2010 only)	

### **IMPORTANT! Maintaining Your TDI Campaign Label Supply**

- SAGA claims count! Warranty Administrators should enter TDI claims promptly to ensure labels can be allocated to support future repairs.
- TDI Labels are allocated daily, free of charge, based on the count of TDI claims entered in SAGA.
- TDI labels cannot be ordered through the Compliance Label Ordering Portal. If you have questions, please email labelrequest@vw.com.

# **Required Tools**



VAS6150X - Diagnostic Tester (or equivalent)

VAS5054A - Remote Diagnosis Head (or equivalent)



GRX3000VAS - Battery Tester/Charger (or equivalent)



- Service Modification Validation Web App
- tdi-inform.track360.com



This web application is compatible with desktops, laptops, Apple and Android mobile devices running the most current versions of FireFox, Chrome, Safari, or Explorer as well as iOS 9+ on iPads and iPhones.



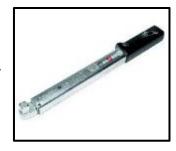
# ! NOTE

#### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.



Socket 22mm -T10491-



Torque wrench -V.A.G 1331- (or equivalent)



Torque wrench -V.A.G 1332- (or equivalent)



Locating pins -T10096-



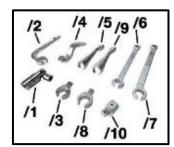
Hose clamp pliers -VAS 6362- (or equivalent)



Engine and gearbox jack -VAS 6931-



Transportation lock for flexible joint -T10404-



Tool set -T10395 A-



-3346- Note: 2 Spindles 3346/2 with nuts 3346/3 from assembly tool -3346-



VAS6254 – Chain Pipe Cutter (or equivalent)

### **Emissions Modification Instructions**

### Section A - Check for Previous Emissions Modification



If the correct TDI Emissions Modification Label is present, no further work is required.

- Criteria 01, 2009 MY vehicles: CAMP TDI 2016\_1A
- Criteria 02, 2010-2014 MY vehicles: CAMP TDI 2016\_1B





• Enter the VIN in Elsa and proceed to the "Campaign/Action" screen.

# i TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>.
   If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.
- Check for other Open campaign actions <red arrow above>.
- Other Open campaign actions must be completed prior to releasing the vehicle to the customer.

# ! NOTE

At this time it is required to complete this action in conjunction with **Campaign 24CV**. Campaign 23U3 requires the condition of the Heated O2 Sensor -G39-to be verified **BEFORE** beginning the flash operations contained in this action.

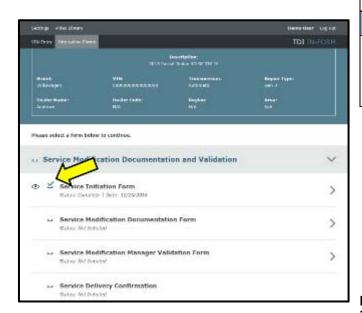
# CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

Refer to **Campaign 24CV** at this time, and complete that action before continuing.

### **Proceed to Section B**

### Section B - Check for Service Initiation







### RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

Look for the image below to indicate labor operations, parts, or labeling that requires IN-FORM tool image documentation.



# U NOTE

### RISK of Non-payment!

Ensure that the "check mark" <arrow> is present prior to beginning any work.

- Ensure the Service Initiation Form has a "check mark" <arrow>.
  - If the Service Initiation Form does not have a "check mark" <arrow>, immediately contact your Service Consultant to complete the initiation.
  - If "check mark" <arrow> is present, initiate Service Modification Documentation Form and continue work.

DO NOT proceed with any work unless you can initiate the Service Modification Documentation Form.

**Proceed to Section C** 

## Section C – Check for Pre-existing conditions, Vehicle Modifications, and MIL light on



- Perform a visual inspection of the intake, exhaust, and emissions systems.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals damage or concerns, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If the visual inspection of the intake, exhaust, or emissions equipment reveals no damage or concerns, continue the work procedure.



- Check for vehicle modifications from original equipment.
  - If vehicle modifications from original equipment related to emissions components <u>are</u> found, **STOP**, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If vehicle modifications from original equipment related to emissions components are <u>not</u> found, continue the work procedure.



- Check for illumination of the MIL <arrow>.
  - If MIL is illuminated, STOP, create a VTA ticket and contact the Volkswagen Technicians Helpline.
  - If MIL is not illuminated, continue the work procedure.

# i TIP

- VTA cases regarding MIL ON conditions require a GFF diagnostic log to be uploaded at the time of first contact.
- The purpose for this step is to document vehicle condition prior to initiation of this action and does not authorize the repair of any pre-existing conditions.

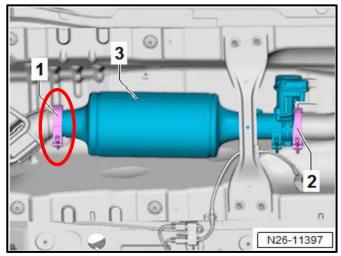
# ! NOTE

At this time it is required to complete this action in conjunction with **Campaign 24CV**. Campaign 23U3 requires the condition of the Heated O2 Sensor -G39-to be verified **BEFORE** beginning the flash operations contained in this action.

# CAMPAIGN 24CV MUST BE COMPLETED BEFORE BEGINNING THE 23U3 CAMPAIGN!

Refer to **Campaign 24CV** at this time, and complete that action before continuing.

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For Model Year 2009 Criteria 01 vehicles: Proceed to Section E

For Model Year 2011-2014 Criteria 02 vehicles: Proceed to Section D

#### For Model Year 2010 Criteria 02 Vehicles ONLY:

- Raise the vehicle on the hoist and inspect the aftertreatment system configuration.
- If the vehicle is a Model Year 2010 with a <u>two-piece</u> DPF and NOx Trap system that has a clamp in location <1>:
  - Proceed to Section D for Criteria 02 (MY 2010-2014)
- If the vehicle is a Model Year 2010 with a
   One-piece DPF and NOX Trap system <arrow</p>
   A> that has NO clamp in location <1>:
  - Proceed to Section E and perform the repair per Criteria 01 instructions -(MY 2009 or MY 2010 with One-piece DPF System).

# Section D – Emissions Kit Installation (Criteria 02 – MY 2010-2014 ONLY)

# U NOTE

At this time, verify that Campaign 24CV has been completed. Campaign 24CV must be completed before continuing with this repair procedure.

THE 24CV CAMPAIGN MUST BE COMPLETED **BEFORE BEGINNING THIS CAMPAIGN!** 

# U NOTE

Section D addresses vehicles built with a **two-piece** Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in Model Year 2010. For vehicles built with a one-piece system, the DPF must be replaced as there is no connection on the original components.

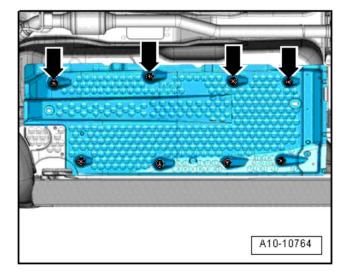
Begin with Section E for vehicles that have a onepiece DPF/Lean NOx trap system. This applies to Model Year 2009 and some 2010 vehicles.

- Open hood.
- Raise vehicle on hoist.
- Unscrew nuts <arrows> and pull underbody cladding down slightly.



### (i) TIP

A wedge could be placed between vehicle body and cladding to allow more work space.

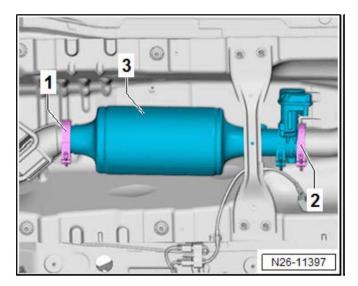


- N26-11396
- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>. Remove plug from retainer.
- Open fasteners for heat shield and pull connector <1> off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.

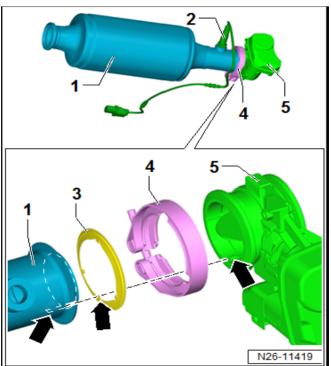


Take a photo of this area now for help with harness routing during reinstallation later.

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 Loosen clamps <1 and 2> and remove NOx storage catalytic converter together with exhaust door control unit -J883-.

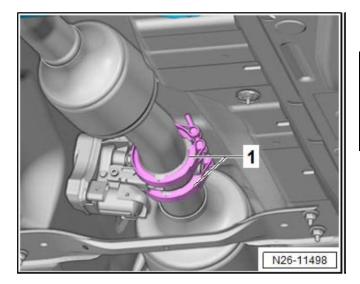


- Screw new oxygen sensor after catalytic converter -G130- <2> into new NOx storage catalytic converter <1> and tighten to 52 Nm using socket, 22 mm -T10491-.
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.

# NOTE

Renew all clamps and seals. The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

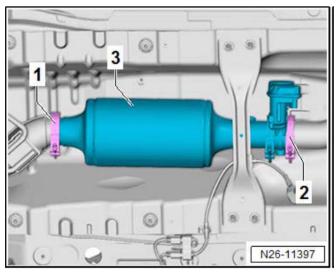
- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.
- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.



 Position all clamps <1> so that they will not collide with underbody.

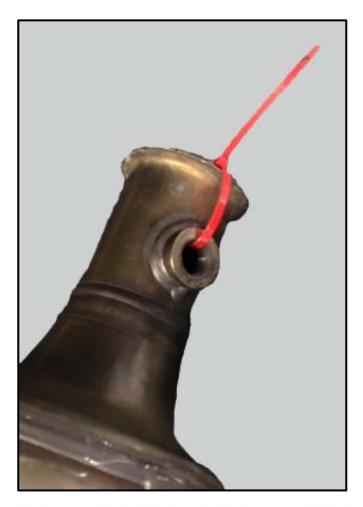
# ① NOTE

Install clamps on the exhaust pipe before installing pipe into vehicle. Do not attempt to stretch clamps around pipe once installed, or clamps may fail to seal properly.



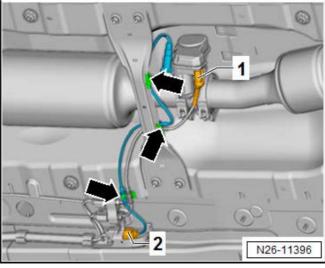
- Set clamp 1K0 253 725 B <2> in place and engage and torque to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.



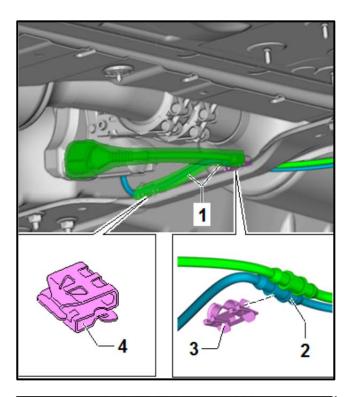


 Install the <u>RED</u> validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.

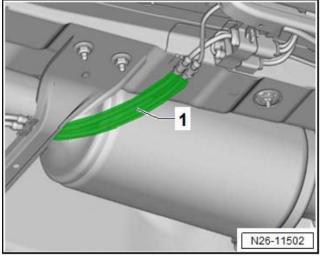




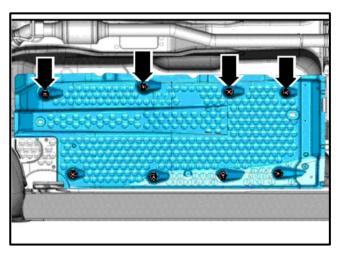
- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.



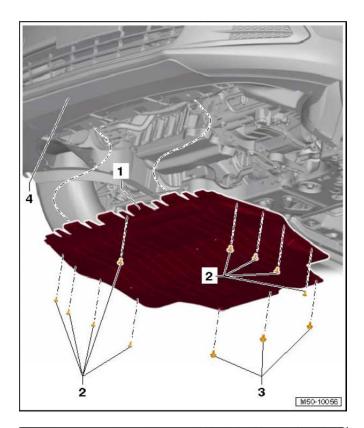
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



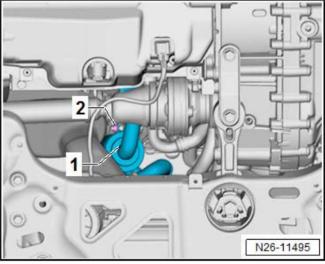
 Wrap new heat insulation mats <1> around wiring and close fasteners.



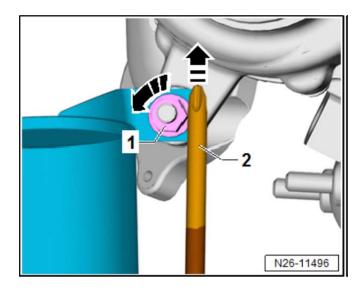
 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



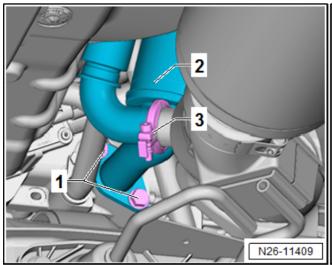
- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



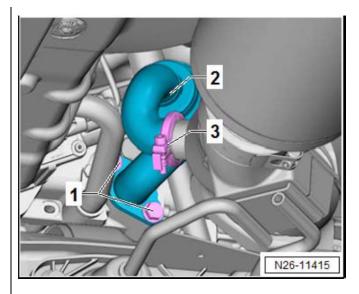
- Remove nut <2> from exhaust gas recirculation filter <1> from below using 13 mm ratchet box wrench (e. g. Snap-on OEXRM13).
- Wrap tape around the tip of a long screwdriver (e.g. Snap-on SDD162 No.2).



 Apply screwdriver <2> on side of nut <1> and unscrew nut while simultaneously pressing up on nut



- Open clamp <3> and remove it.
- Remove bolts <1> and remove exhaust gas recirculation filter <2>.

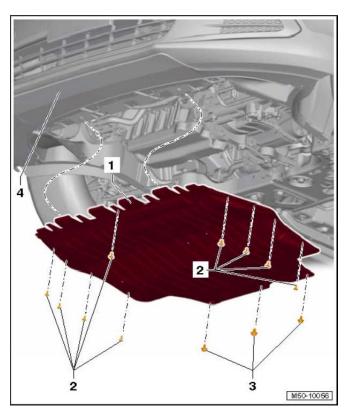


- Set new exhaust gas recirculation filter <2> with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.

Description	Part number
EGR Filter	1K0 253 120 B
Seal	03G 131 547 H
Seal	1K0 253 115 AG
Clamp	1K0 253 725 F



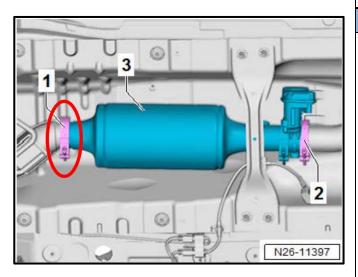
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- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:
  - o Bolt <2>: 2 Nm
  - Bolt <3>: 6 Nm (renew)

**Proceed to Section F** 

# Section E – Emissions Kit Installation (Criteria 01 – MY 2009 or MY 2010 with One-piece DPF System)



## U NOTE

At this time, verify that **Campaign 24CV** has been completed. Campaign 24CV must be completed before continuing with this repair procedure.

THE 24CV CAMPAIGN MUST BE COMPLETED BEFORE BEGINNING THIS CAMPAIGN!

# U NOTE

Section E addresses 2009 and some 2010 Model Year vehicles built with a <u>one-piece</u> Diesel Particulate Filter/Lean NOx trap exhaust system. This system was introduced starting in Model Year 2009 and ended early in Model Year 2010. For vehicles built with a <u>one-piece</u> system the DPF must be replaced, as there is no clamped connection on the original components. Begin with Section D for a 2010-2014 Model Year <u>two-piece</u> DPF/Lean NOX trap system. There is no requirement to remove/replace the DPF if the system has a clamp in location <1>.

If the vehicle is a 2010 Model Year Vehicle with a <a href="mailto:one-piece">one-piece</a> DPF and NOx Trap system that has a welded joint, perform the following repair instructions (Section E) listed under criteria 01 and inform any appropriate Dealer personnel to verify that your warranty claim is filed correctly.

### --IMPORTANT!--

2010 model year vehicles that were originally equipped with a one-piece DPF and NOx Trap system require Completion Label part number CAMPTDI2016\_1C to be installed. See Section H for additional details.

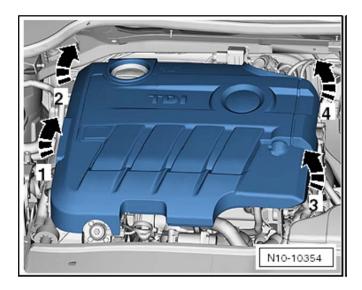
# **A** WARNING

When doing any repair work, especially in the engine compartment, pay attention to the following due to the cramped conditions:

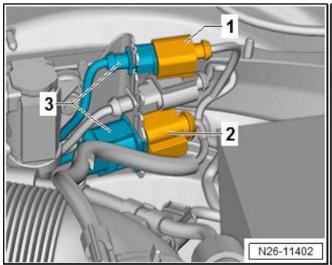
- Route lines and electrical wiring so that they are in their original positions E.g. for fuel, hydraulics, coolant and refrigerant, brake fluid and vacuum.
- Ensure that there is sufficient clearance to all moving or hot components.

# A CAUTION

The bracket for the engine cover on the cylinder head cover may break off if improperly removed. Always remove the engine cover panel according to the following instructions.



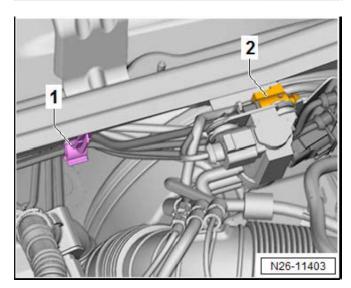
 Pull engine cover up out of fastening elements near <arrows> in order shown. To do this, grip as far as possible beneath engine cover.



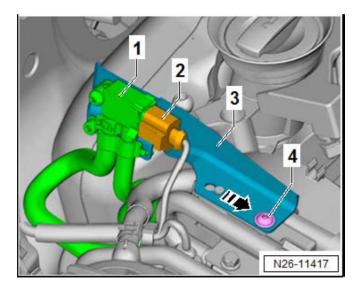
- Disconnect »orange« connector for exhaust gas temperature sender 2 -G448- <1> and »black« connector for oxygen sensor -G39- <2> on plenum chamber bulkhead.
- Remove wiring <3> from retainer and move clear.



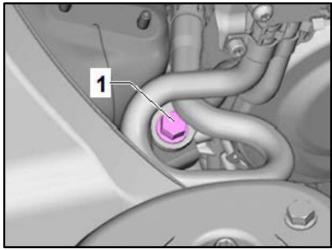
Take a photo of this area now for help with harness routing during reinstallation later.



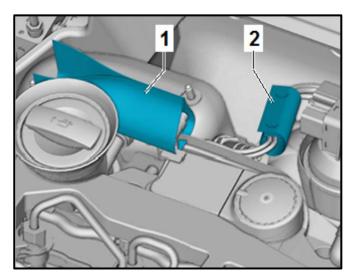
- Disconnect »brown« connector for exhaust gas temperature sender 3 -G495- <2> (secured behind bracket).
- Thread lines out of brackets <1> on plenum chamber bulkhead and on turbocharger.



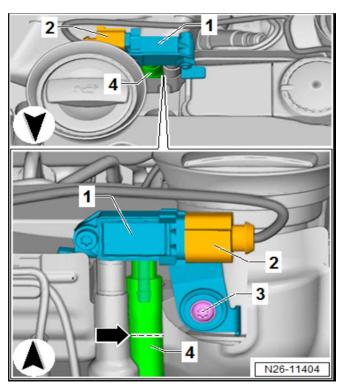
- Pull connector <2> off differential pressure sensor -G505- <1>.
- Remove securing bolt <4>, remove bracket <3> with differential pressure sensor -G505- <1> in <direction of arrow> and move aside. Control lines remain connected.

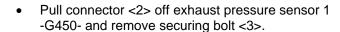


 Unscrew securing bolt <1> on upper bracket for particulate filter.



- Open fasteners on heat insulation <1> for exhaust pressure sensor 1 -G450-.
- Open heat insulation <2> for wiring and remove.

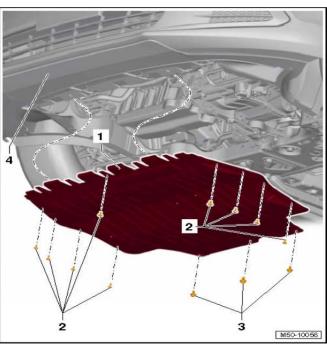




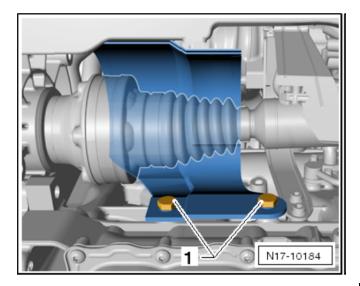
- Cut control line <4> to exhaust gas recirculation cooler with an appropriate tool (e.g. utility knife) at the line <arrow> indicated in figure.
- Move bracket with exhaust pressure sensor 1
  -G450- aside (control line to particulate filter remains connected).



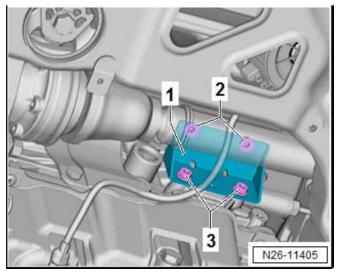
Bundle the loose harnesses with tape or similar means. Place harnesses on top of the DPF to prevent them from catching on vehicle while removing the DPF.



- Remove bolts <2 and 3>.
- Pull noise insulation <1> back, out of front bumper cover <4>.



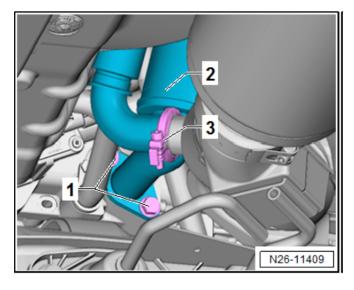
 Unscrew bolts <1> and remove heat shield for right drive shaft.



# ① NOTE

Unscrew securing nuts above bracket <2> with ratchet wrench -T10384-. In some cases, the bracket cannot be removed until the particulate filter has been detached.

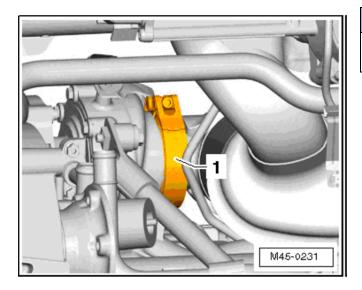
 Remove nuts <2 and 3> and remove lower bracket for particulate filter <1>.



Open clamp <3> and remove it.

# U NOTE

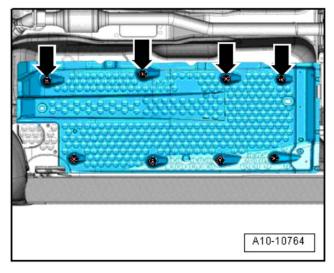
The exhaust gas recirculation filter <2> is removed after the particulate filter has been removed.



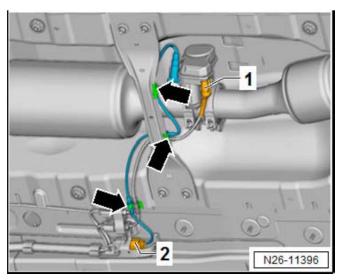


Position of clamp <1> may vary. If necessary, use 5 mm bit with ball head (e.g. T10058).

• Loosen and remove clamp <1> connecting turbocharger and particulate filter.

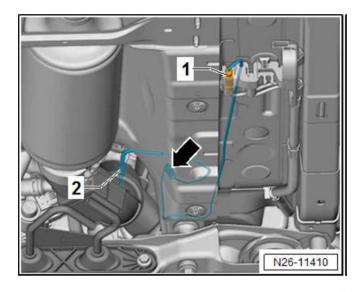


• Unscrew nuts <arrows> and pull underbody cladding on right down slightly.

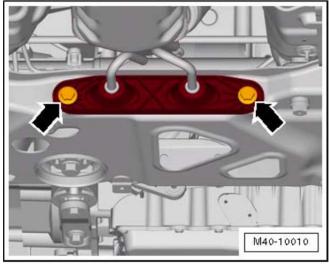


- Disconnect »brown« connector for oxygen sensor after catalytic converter -G130- <2>. Remove plug from retainer.
- Open fasteners on heat shield, pull connector <1> off exhaust door control unit -J883- and thread wiring out of retainers <arrows>.

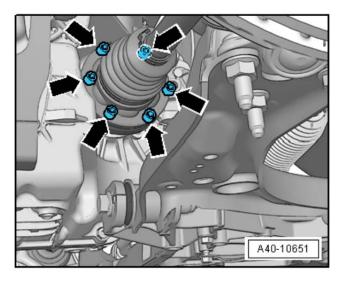
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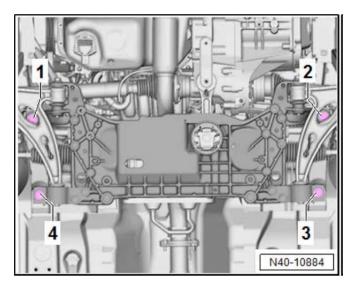
 Disconnect connector <1>. Take electrical wire from exhaust gas temperature sensor 4 -G648-<2> on heat shield out of clip <arrow> and bracket and move to side.



• Remove bolts <arrows> from exhaust system bracket on subframe.



 Remove bolts <arrows> and remove right drive shaft from transmission. Rest drive shaft on front axle.



 To fix the position of the subframe, the locating pins -T10096- must be screwed one at a time into positions <1, 2, 3 and 4>.

# U NOTE

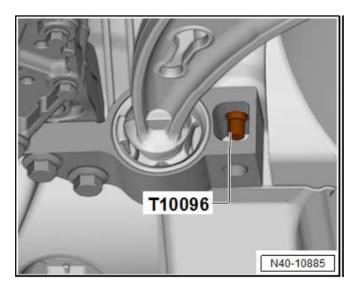
The locating pins -T10096- may be tightened only to max. 20 Nm, or the threads of the locating pins will be damaged.



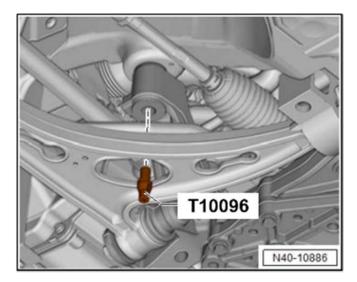
# U NOTE

### Severe Damage RISK!

When installing the subframe locating pins -T10096-, it is possible to damage the subframe mount threads due to the normal variance in alignment. Damage to the subframe mount threads would be an extensive, body-shop repair that is not covered under this action. Only use hand tools for this process. If the locating pins bind, they should be backed out, threads cleaned and restarted.



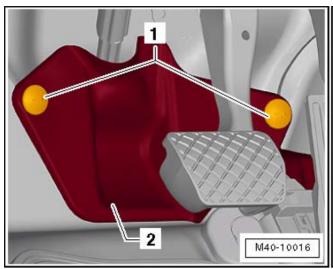
 One at a time, remove securing bolts on mounting bracket and replace them with locating pins -T10096- on both sides. Tighten locating pins to 20 Nm.



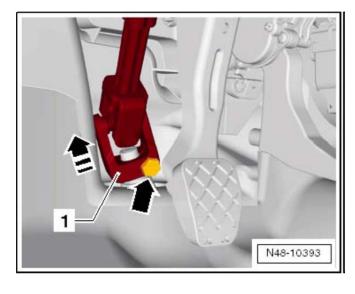
 One at a time, replace bolts in brackets with locating pins -T10096-. Tighten locating pins to 20 Nm.



The position of the front axle is now fixed.



- Turn steering wheel to straight-ahead position and remove ignition key to engage steering wheel lock.
- If the vehicle has the keyless locking and starting system "Keyless Access", switch off ignition and open driver door to engage steering wheel lock.
- Remove bolts <1> and remove footwell trim <2>.



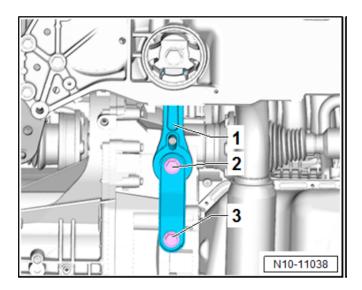
# **A** CAUTION

Never perform the following actions if the U-joint has been separated from the electromechanical steering mechanism:

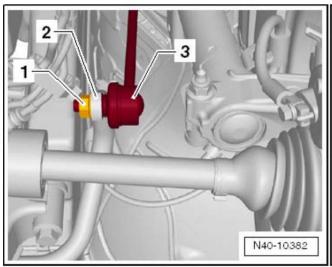
- Switching ignition on
- Turning steering mechanism
- Turning steering column

These points must always be complied with because these actions can cause irreparable damage to the clock spring or other items that are not covered under this action.

 Remove bolt <arrow> from U-joint <1> and pull off U-joint in <direction of arrow>.



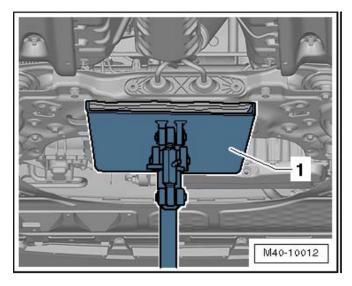
Remove bolts <2 and 3> for pendulum support
 <1> from gearbox.



- Unscrew hexagon nut <1> on left and right from coupling rod <3>.
- Pull coupling rod <3> on the left and right out of anti-roll bar <2>.



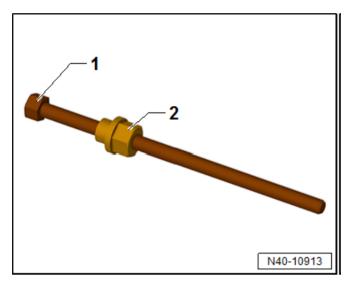
Apply penetrating oil to the hexagon <1> nut to aid in removal.



Place engine and gearbox jack -VAS 6931- <1> under subframe.

# U NOTE

Secure the subframe in position on the engine and gearbox jack -VAS 6931- using the included retaining strap if you are **NOT** utilizing the Screw Nuts -3346/3- and Spindles -3346/2- listed in the next steps.

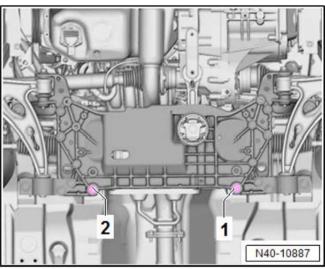


Optional method for securing, raising, and lowering the subframe utilizing Screw Nuts -3346/3- <2> and Spindles -3346/2- <1>:

 Install Screw Nuts -3346/3- <2> by hand as shown onto spindles -3346/2- <1> to the end of threads as shown.



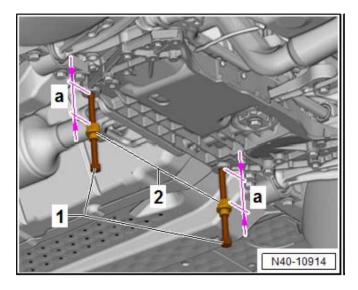
The purpose of including and utilizing special tools Screw Nuts -3346/3- and Spindles -3346/2- in this work instruction is to allow greater clearance and working area in and around the subframe during the DPF removal. These tools and subsequent operation steps are not required, but recommended.



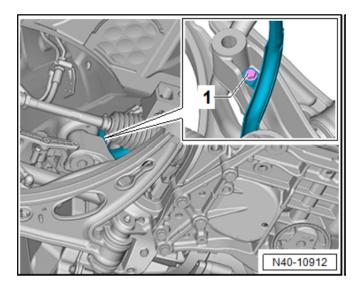
# ! NOTE

For clarity of illustration, the following steps are shown without the engine and gearbox jack in position.

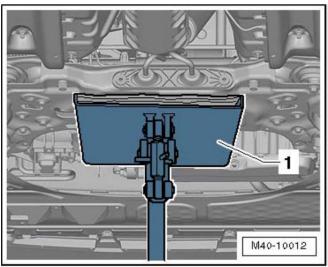
Unscrew bolts <1 and 2>.



 Screw in spindles 3346/2 <1> by hand until distance <a> equals 90 mm.



 Lower subframe about 5cm and remove bolt <1> on the wire harness bracket for steering gear.

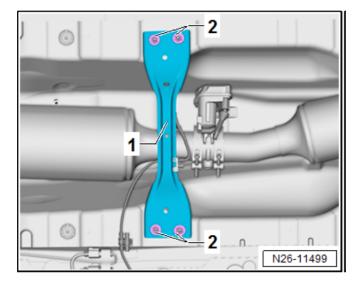


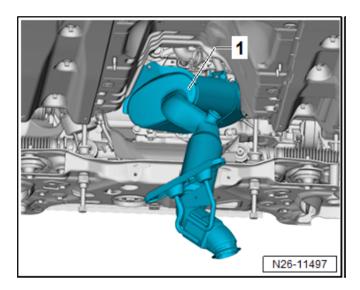
 If utilizing the Screw Nuts -3346/3- and Spindles -3346/2-, lower the engine and gearbox jack -VAS 6931- <1> and completely remove it from work area.



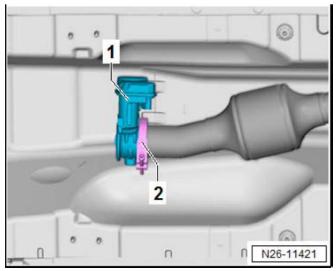
The subframe is now supported by spindles 3346/2.

- If NOT utilizing Screw nuts -3346/3- and Spindles -3346/2-, lower the subframe approximately 90cm using the engine and gearbox jack -VAS 6931- <1>, taking care to not damage or overextend any wiring, tubing, or other components that could be damaged. The engine and gearbox jack -VAS 6931- <1> will remain in position for the duration of the subframe operations if the Spindles -3346/2- are not used.
- Remove hexagon nuts <2> from front tunnel cross-piece <1> and remove tunnel cross-piece.
- Remove securing clamp between NOx storage catalytic converter and exhaust door control unit -J883-.

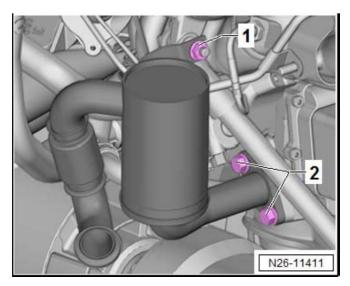




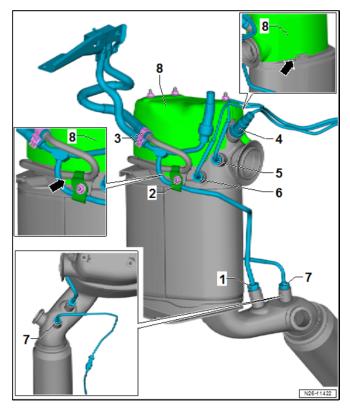
 With the help of a second technician, remove particulate filter. Do this by turning the particulate filter <1> out of center tunnel. Note electrical wiring and components when doing this.



 Open clamp <2> and remove exhaust door control unit <1>.

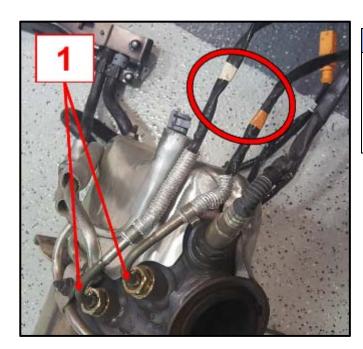


 Remove nut <1> and bolts <2>, and remove exhaust gas recirculation filter.



# i TIP

Before the installation of the newly assembled filter, place the new and old assembly side-by-side for comparison.



# Assemble particulate filter as follows before installation:

# **A** CAUTION

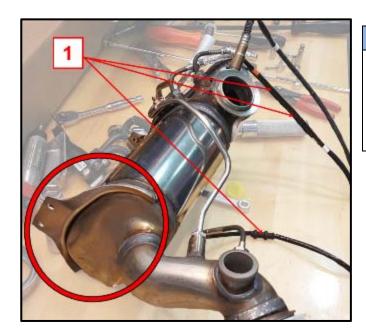
If transportation lock was not included among items supplied, ensure that flexible joint is fixed with transportation lock -T10404- to prevent damage to the flex pipe.

- 1 Position control line and screw in union nut hand-tight.
- 2 Position retainer for control line, screw in bolt, tighten to 9 Nm and then tighten union nut to 45 Nm.
- 3 Attach connecting hoses from differential pressure sensor -G505- as shown and secure with spring clamps.
- 4 Screw in oxygen sensor -G39- and tighten to 52 Nm.
- 5 Screw in exhaust gas temperature sensor 2
   -G448- (connector color: orange, angled 110°)
   and tighten to 45 Nm.
- 6 Screw in exhaust gas temperature sensor 3
   -G495- (connector color: brown) and tighten to 45

   Nm.
- 7 Screw in exhaust gas temperature sensor 4 -G648- (connector color: beige, angled 90°) and tighten to 45 Nm.
- 8 Set heat shield in position and check that it is properly seated <arrows>. Tighten nuts to 10 Nm.

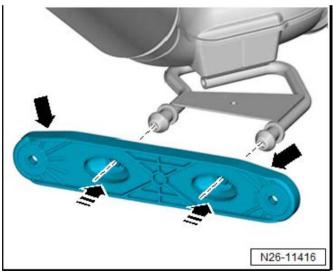
# U NOTE

When installing the exhaust gas temperature sensors to the DPF, it is possible to install the sensors <1> in the wrong locations. Sensors installed in the wrong positions will not function properly. Pay attention to the sensor color coding <circle> when installing sensors into the DPF.

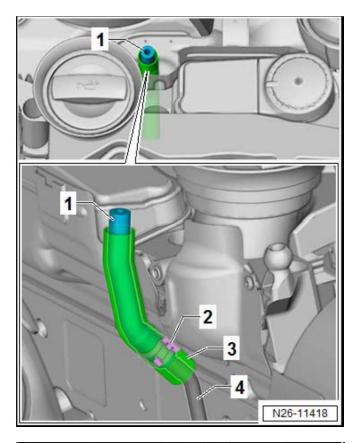


# • NOTE

When "bench-installing" the exhaust gas temperature sensors to the DPF, the edge of the lower bracket <circle> can damage the sensor wires <1> if they are allowed to get underneath the bracket while positioning the DPF. Pay special attention to the sensor wiring to prevent damage to these sensors.

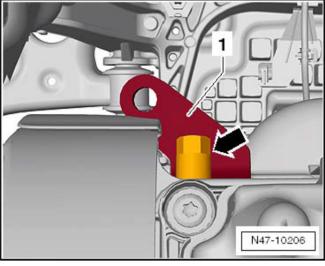


 Press bracket in <direction of arrow> onto pins of particulate filter. The bracket edge which tapers towards the ends <arrows> must face upwards.



# Renewing hose for control line exhaust pressure sensor 1 -G450-

- Remove heat shield <3>.
- Open clamp <2> and pull hose which was cut during removal <1> from control line <4>.
- Renew hose <1> and tighten clamp <2>. Push heat insulation <3> over hose and clamp.

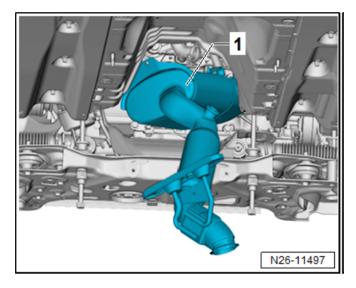


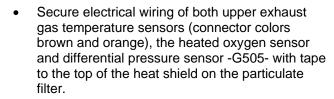
# Installing particulate filter:

# **A** CAUTION

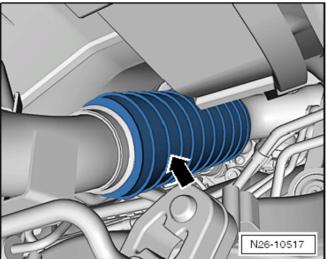
Danger of damaging flexible joint between particulate filter and NOx storage catalytic converter. When removing and installing:

- Do not bend flexible joint more than 10°.
- Install flexible joint free of tension.
- Take care not to damage wire mesh on flexible joint.
- The flexible joint must be secured with transportation lock -T10404- to prevent overstretching.
- Always hold the particulate filter by the heavy casing when transporting or handling it.
  - Loosen nut <arrow> for bracket <1> on top of cylinder head a few turns.

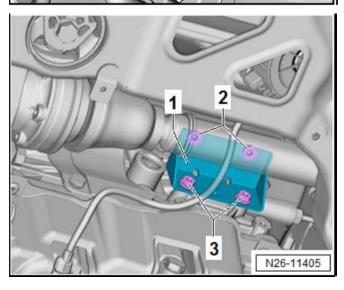




- Position new clamp 1K0 253 725 over the intake funnel of the particulate filter. Orient new clamp (positioned downward) to the same clocking as the original clamp.
- Move particle filter into installation position by »turning« it into center tunnel. Take care not to damage electrical wiring or components.



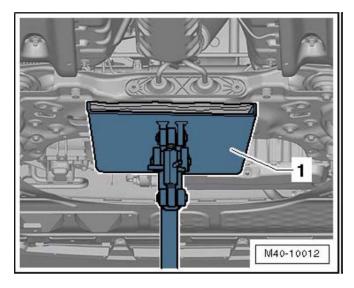
 Ensure that the transportation lock -T10404-<arrow> is properly seated.



## ① NOTE

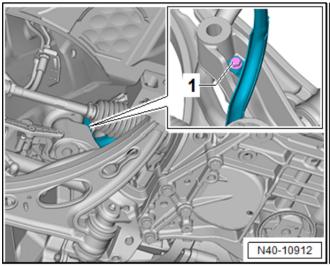
Unlike the production bracket, the supplied bracket no longer has threaded studs. It must be screwed to the particulate filter using the supplied bolts, and the nuts must be screwed on from below. The ball indentation on the bracket faces the crankcase.

- Hold bracket in place and start new bolts for nuts
   in bracket from above.
- Start nuts <3 and 2> by hand a few full turns.

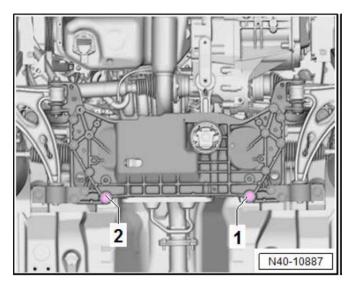


#### Reinstalling subframe:

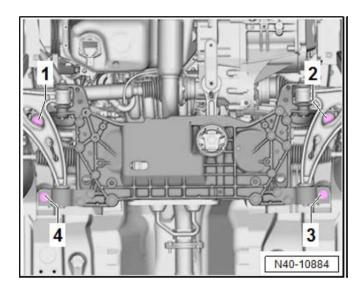
 If Spindles -3346/2- are being used, reposition engine and gearbox jack -VAS 6931- <1> under subframe.



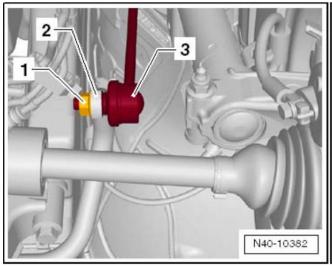
- Raise the subframe until it is approximately 5 cm away from the vehicle chassis and screw in bolt
   on the wire harness bracket for steering gear and tighten to 3 Nm.
- Carefully raise subframe to installation position taking locating pins into consideration.



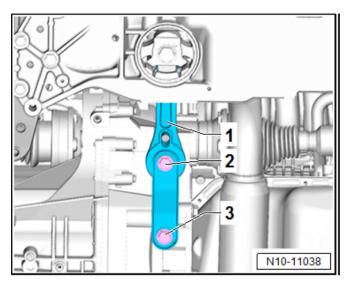
 If installed, remove spindles -3346/2- and screw in new bolts (M12 x 110 mm) at positions <1 and 2>. Tighten to 70 Nm and turn an additional 90°.



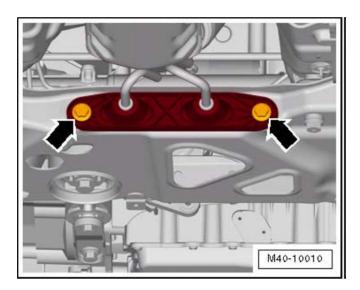
- Remove locating pins one at a time and replace them with new bolts (M12 x 90 mm) at locations
   1, 2, 3, and 4>.
- Tighten bolts to 70 Nm, then tighten them an additional 90°.
- Take load off engine and gearbox jack
   -VAS 6931-, disconnect the securing strap, and remove it from work area.



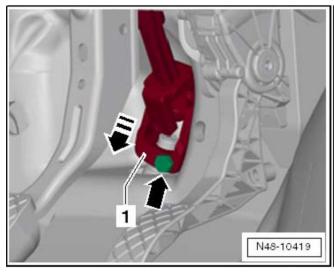
 Guide coupling rods <3> on left and right into anti-roll bar <2>, screw on new hexagon nuts <1> and tighten to 65 Nm.



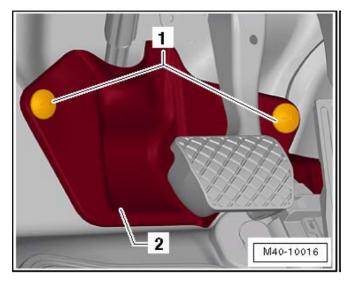
 Screw in new bolts <2 and 3> for pendulum support <1>, tighten them to 50 Nm and then tighten and additional 90°.



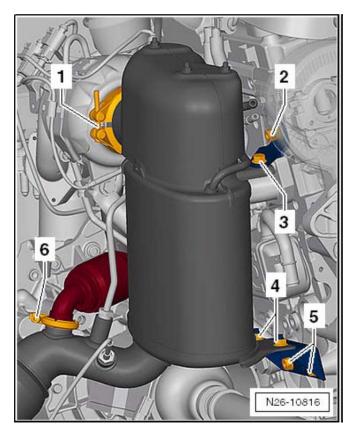
 Screw new bolts <arrows> loosely into exhaust system bracket on subframe.

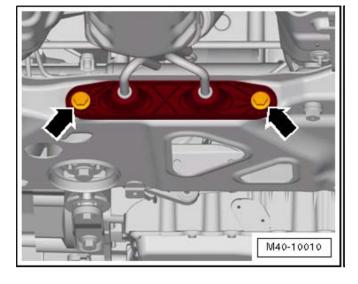


 Fit U-joint in <direction of arrow>, screw in new bolt <arrow> for U-joint <1> and tighten to 30 Nm.



Position footwell trim <2> and hand-tighten bolts <1>.





#### Tightening order for particulate filter:

# U NOTE

Due to restricted space, the nut <2> cannot be reached with a torque wrench. Use a commercially available 13 mm combination wrench with a 15° offset and a total length of 140 mm.

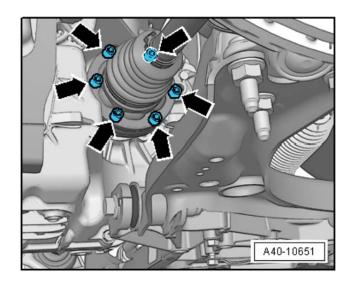
Α	Position particulate filter with new seal on turbocharger and secure clamp <1> loosely.	
В	Screw in bolts <2 to 5> loosely by hand.	
	<ul> <li>Particulate filter and retainer must be</li> </ul>	
	able to move	
С	Tighten clamp <1>	7 Nm
D	Tighten nuts <5>	23 Nm
Е	Tighten nuts <4>	23 Nm
F	Tighten nut <2>	23 Nm
G	Tighten nut <3>	23 Nm

# ! NOTE

#### **RISK of Exhaust Leak!**

Tightening sequence must be followed. Clamp <6> is installed when the exhaust gas recirculation filter is installed.

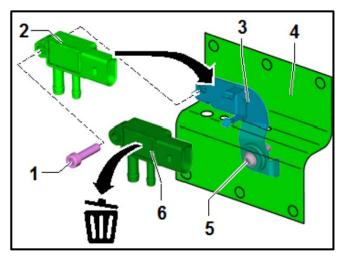
- Tighten bolts <arrows> securing exhaust system bracket to subframe to 23 Nm.
- Remove transport and protective packaging from flexible joint for particulate filter.





The lengths of the driveshaft/gearbox connecting bolts differ depending on gearbox:

- Manual gearbox = M10x52 mm (N 909 911 02)
- Dual clutch gearbox (DSG) = M10x23 mm (N 909 910 02)
  - Position right drive shaft and screw in new bolts <arrows>. Tighten bolts initially to 10 Nm, then tighten further to 70 Nm using a crisscross pattern.

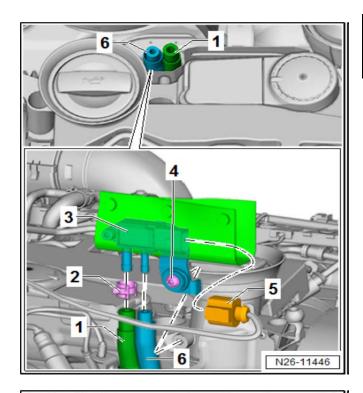


#### Installing exhaust pressure sensor 1 -G450-

# ① NOTE

For greater clarity, exhaust pressure sensor 1 -G450is shown here from behind (perspective of plenum chamber bulkhead).

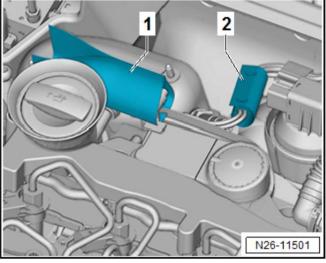
- 1 Remove bolt <1>.
- 2 Remove and dispose of old pressure sensor <6>.
- 3 Insert new pressure sensor <2> into bracket <3>.
- 4 Screw in bolt <1> and tighten to 10 Nm.
- 5 Guide bracket with pressure sensor through openings in new heat shield <4>.



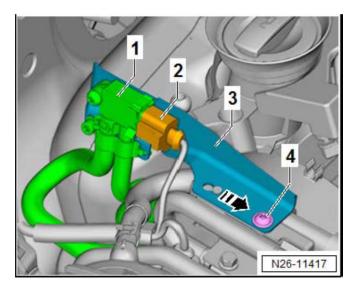


Take care to connect the hoses <6> (thin) and <1> (thick) correctly.

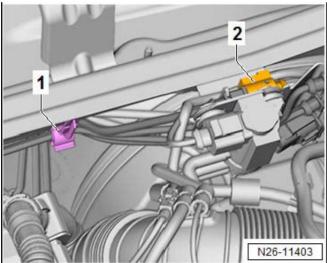
- Guide exhaust pressure sensor 1 -G450- <3> into open ends of hoses as shown and secure thicker hose <1> with new clamp <2>.
- Screw in bolt <4>, tighten to 2 Nm and connect connecter <5>.



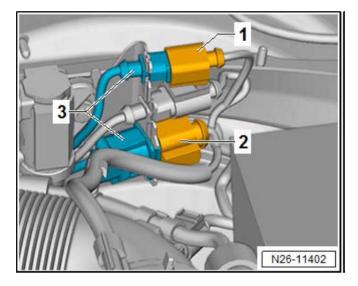
- Close fasteners on heat insulation mat <1> around exhaust pressure sensor 1 -G450-.
- Wrap new heat insulation mat <2> around wiring and close fasteners.



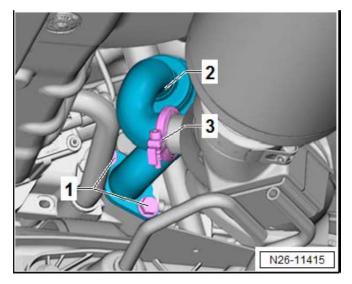
- Position bracket <3> with differential pressure sensor -G505- <1> opposite <direction of arrow>, screw in new securing bolt <4> until head makes contact and tighten to 4 Nm.
- Push connector <2> onto differential pressure sensor -G505- <1>.



- Connect »brown« connector for exhaust gas temperature sensor 3 -G495- <2> and secure behind bracket.
- Thread lines into brackets <1> on plenum chamber bulkhead and on turbocharger.



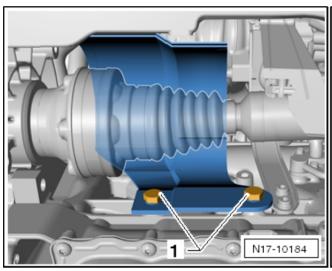
 Connect »orange « connector for exhaust gas temperature sensor 2 -G448- <1> and »black « connector for heated oxygen sensor -G39- <3> on plenum chamber bulkhead and secure wiring <3> in retainer.



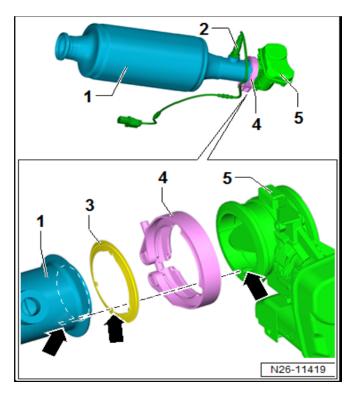
### Installing exhaust gas recirculation filter:

- Set exhaust gas recirculation filter with new seals in place, screw in bolts <1> and tighten to 9 Nm.
- Position clamp <3> and tighten to 3.5 Nm.





 Position heat shield for right drive shaft, screw in bolts <1> and tighten to 25 Nm.



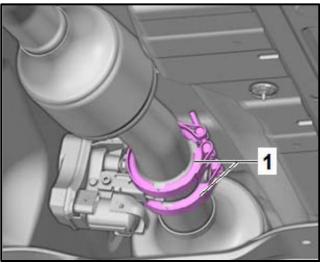
# Installing NOx storage catalytic converter with exhaust door control unit -J883-

Screw oxygen sensor after catalytic converter
 -G130- <2> into NOx storage catalytic converter
 <1> and tighten to 52 Nm.

# U NOTE

The clamps before and after the exhaust door control unit are narrower than the clamp connecting the particulate filter to the NOx storage catalytic converter. Ensure that they are correctly allocated.

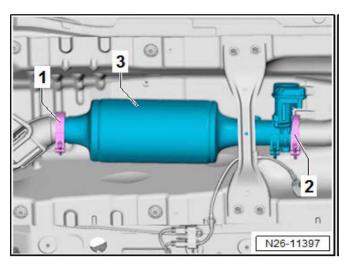
- Set new exhaust door control unit -J883- <5> with new seal <3> on NOx storage catalytic converter <1>. Note notches <arrows>.
- Position clamp 1K0 253 725 B <4> and tighten to 7 Nm.



- Place NOx storage catalytic converter together with exhaust door control unit -J883- with new seals in installation position. Note notches at rear connection.
- Position all clamps <1> so that they will not collide with underbody.

# U NOTE

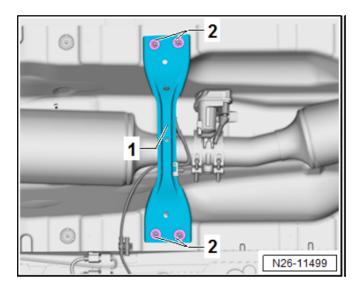
Install clamps on the exhaust pipe before installing pipe into vehicle. Do not attempt to stretch clamps around pipe once installed, or clamps may fail to seal properly.



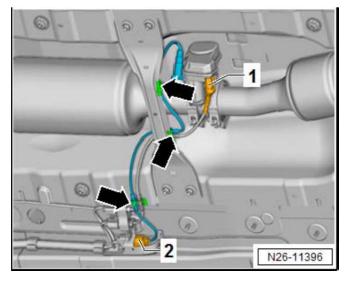
- Set clamp 1K0 253 725 B <2> in place and engage. Then tighten to 7 Nm.
- Set clamp 1K0 253 725 <1> in place and engage. Then tighten to 7 Nm.



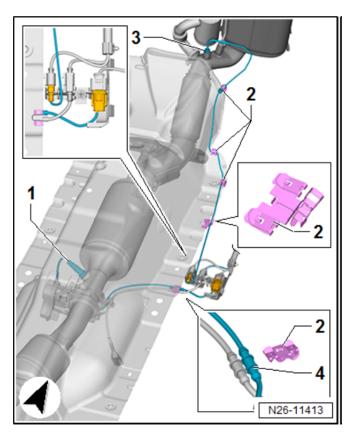
The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Volkswagen dealer. ©2018 Volkswagen Group of America, Inc. All Rights Reserved.



• Set front tunnel cross-piece <1> in place, screw on hexagon nuts <2> and tighten to 20 Nm.

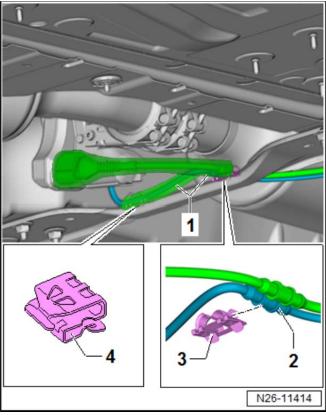


- Connect »brown« connector for oxygen sensor after catalytic converter -G130- <2> and attach to bracket.
- Push connector <1> onto exhaust door control unit. Secure lines in retainers <arrows>.

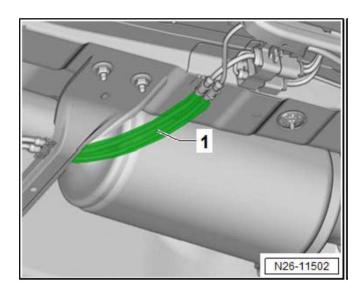


#### Routing electrical wiring on underbody:

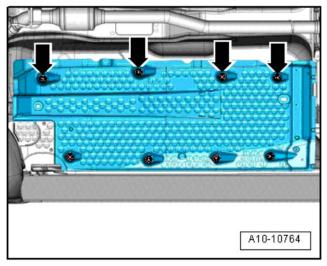
 Place electrical wiring from oxygen sensor after catalytic converter -G130- <1> and exhaust gas temperature sensor 4 -G648- <3> in clips <2> on heat shield as shown. Connect connector and secure in bracket.



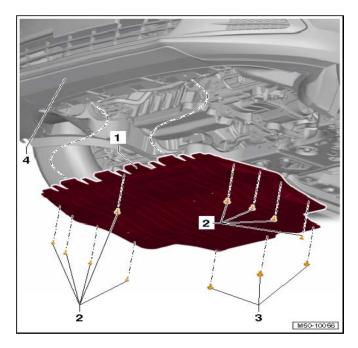
- Wrap new heat insulation mats <1> around wiring and close fasteners.
- Place wires <2> in clips <3 and 4>.



 Wrap new heat insulation mat <1> around wiring and close fasteners.



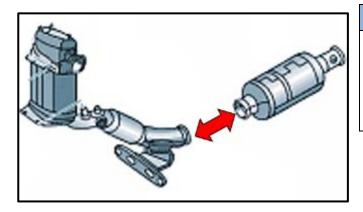
 Press underbody cladding upward and tighten nuts <arrows> to 2 Nm.



- Push noise insulation <1> forward into front bumper cover <4>.
- Screw in bolts <2> and new bolts <3> and tighten as follows:

o Bolt <2>: 2 Nm

Bolt <3>: 6 Nm (renew)



# ① NOTE

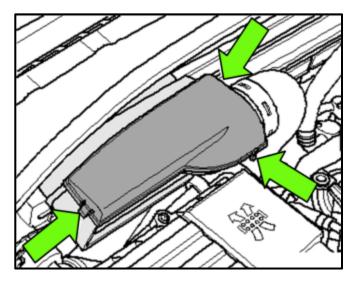
On one-piece DPF with NOx trap system (MY 2009 and some MY 2010 cars), the NOx trap must be separated from the DPF before for core credit. Separating the DPF from the NOx trap will allow it to fit into the packaging the new NOx trap catalyst was shipped in.

 Separate NOx trap from DPF using -VAS6254-Chain Pipe Cutter (or equivalent).



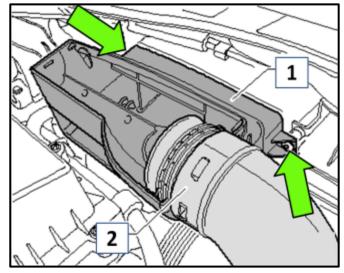
- Install the <u>RED</u> validation strap to the NOx catalytic converter <as shown> to confirm that the proper part is being returned for core.
- Return just the NOx trap catalytic converter. You
  may reuse the packaging that the new NOx trap
  catalyst was shipped in. There is no need to
  return the DPF for core.



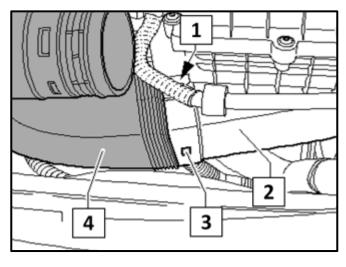


#### **Replace Glow Plug Control Module:**

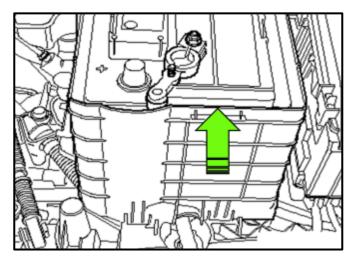
- Switch ignition off and remove key
- Open hood.
- · Carefully remove engine cover.
- Release the tabs <arrows> and remove the cover on the air intake.



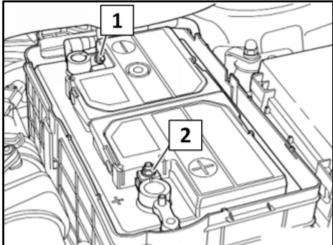
 Remove the screws <arrows> for the air intake guide <1> and pull the guide hose <2> out of the air intake guide <1>.



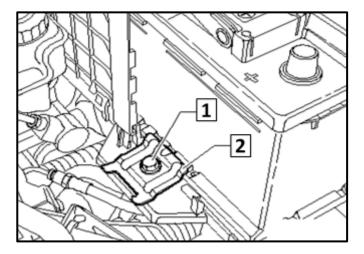
 Press the tabs <1 and 3> and remove the air guide hose <4> from the lower air filter housing <2>.



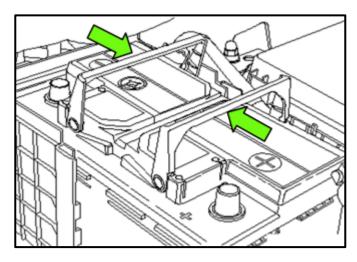
 Remove the battery cover in the direction of <arrow>.



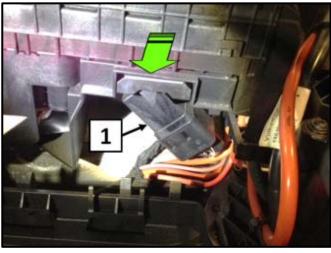
- Disconnect and isolate the ground cable <1> from the battery negative pole.
- Disconnect the positive cable <2> from the battery positive pole.



• Remove the bolt <1> and then remove the clamping plate <2>.



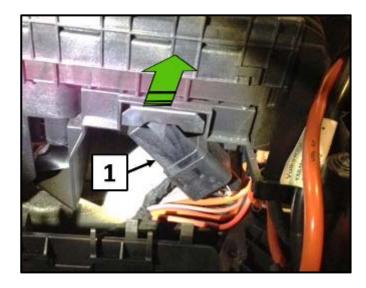
 Fold up the handles <arrows> and remove the battery.



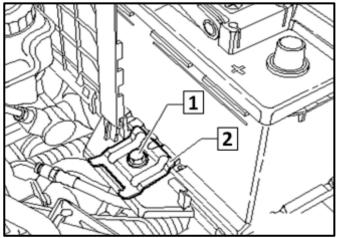
 To remove, slide the glow plug control module with bracket <1> outward from underneath the left engine compartment E-box in <direction of arrow>.



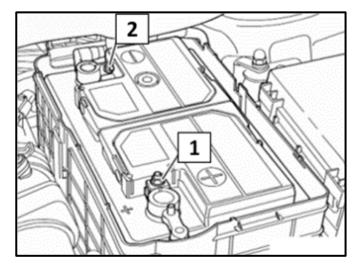
- Inspect, and if required, replace the glow plug control module based upon the part number.
  - If part number "03L 907 281 B" <arrow>
    is present, continue the work procedure
    and reinstall the glow plug control
    module.
  - If part number "03L 907 281 B" <arrow>
    is not present, you are required to
    replace the glow plug control module
    with part number 03L 907 281 B.
    - If the glow plug control module requires replacement, disconnect electrical connector, remove screw with bracket and reinstall onto new glow plug control module with part number 03L 907 281 B.



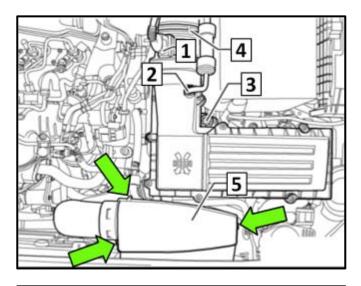
To reinstall, slide glow plug control module <1>
into position underneath left engine compartment
E-box <in direction of arrow>.



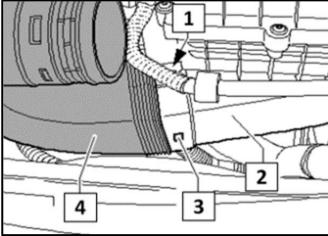
- Reinstall battery.
- Reinstall the clamping plate <2> with bolt <1> and torque to 20Nm.



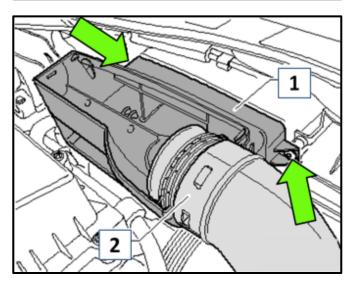
- First, reconnect positive cable to positive terminal on battery and torque screw <1> to 6Nm.
- Second, reconnect negative cable to negative terminal on battery and torque screw <2> to 6Nm.
- Reinstall battery cover.



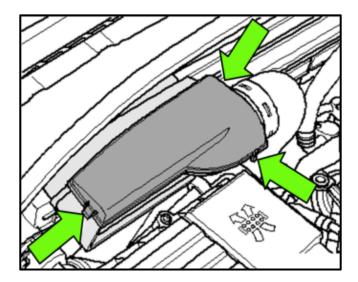
- · Reinstall the air filter housing.
- Tighten the bolt <3> for the lower air filter housing.
- Reinstall the air intake tube and close the clamp <4>.
- Reconnect the Mass Airflow Sensor -G70connector <1> and the vacuum line <2>.



 Reinstall the air guide hose <4> onto the lower air filter housing <2>.



 Reinstall the air intake guide <1> and air intake guide hose <2>, then tighten the screws <arrows>.



- Reinstall the cover on the air intake and secure tabs <arrows>.
- · Reinstall engine cover.
- Switch on ignition.

# i TIP

The ASR/ESP Control Lamp –K155– will light up continuously until the vehicle is driven 15 to 20km/h. This will activate the Steering Angle Sensor –G85–.

- Connect Diagnostic Tester and clear faults.
- Disconnect Diagnostic Tester.
- Check and reset the clock.
- Completely open/close all power windows and set pinch protection.
- Perform function test of all electrical consumers.

**Proceed to Section F** 

### Section F - Software Update Procedure (All Criteria)

# NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- ✓ The ODIS software is completely up to date.
  - Refer to the "Alerts" section on ServiceNet home page for the current ODIS version.
- ✓ The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.
  - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure
    to do so may cause the update to fail, which could result in damage to the control module.
    Control modules damaged by insufficient voltage will not be covered.
- √ The screen saver and power saving settings are off.
  - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- √ The VAS Diagnostic Tester is plugged in using the supplied power adapters.
  - Under no circumstances should the tester be used on battery power alone during the software
    update. Failure to do so may result in the tester powering off during the update, which could
    result in damage to the control module.
- ✓ If using the Bluetooth or WiFi transmitter head, it must be connected to the tester with a USB cable.



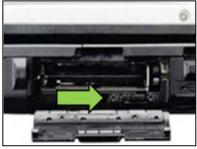
#### Using Bluetooth for this action is PROHIBITED!

Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

- Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module.
   It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- √ The Bluetooth function of the scan tool is physically switched off <see pictures below>.



VAS 6150 & VAS 6150A (Front panel behind handle)



VAS 6150B (Right side behind WIRELESS door)



(Left side behind SC/EX door)

# **A** WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

# i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions.* 

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

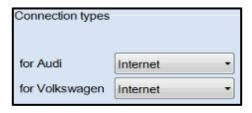
# Things to check before starting Software Version Management (SVM):

✓ Check and confirm that you have a LAN connection <arrow>.



√ Start a connections test <arrow> and verify that all connections pass.











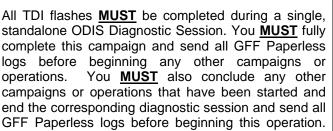


- Open the hood.
- Open the battery cover.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery.
- Switch the ignition on.
- Apply the parking brake.
- Switch the headlights off.
- Connect the VAS6150X Diagnostic Tester (or equivalent) to the vehicle.
- Start the ODIS program.

# U NOTE

operations.





Failure to independently separate the ODIS diagnostic session for this campaign will cause problems updating the FAZIT server in Germany and will delay if not negate the payment of the emissions modification.

#### **IMPORTANT!**

If there are any ODIS "Hot-Fix" patches installed, they **MUST** be removed from the scan tool before beginning this operation. ODIS "Hot-Fix" patches may affect the flash process.

- At this time, refer to the "Alerts" section of ServiceNet <arrow> to verify that the most recent version of ODIS Software is loaded to the VAS6150X Diagnostic Tester (or equivalent). Failure to flash the vehicle using the most recent version of ODIS Diagnostic Software will cause faults in certain features of the flash operation.
- Failure to validate the ODIS Diagnostic version before flashing the vehicle may result in flash failure, and may delay if not negate the payment of the emissions modification.

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- Confirm that scan tool is communicating with the diagnostic head by USB <Green Arrow>.
  - If the Bluetooth symbol is shown <Red Arrow> then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.
- Upon ODIS startup, verify the "Diagnosis" operating mode is selected <as shown>.

# . NOTE

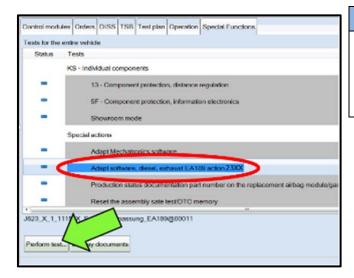
For the duration of the flash, the following is required to keep the BUS system active during the flash process:

- Driver side door open
- Doors unlocked
- Hazzard flashers in the "On" position
- It is imperative that these steps are followed so the BUS system stays active throughout the flash process. Failure to follow these these instructions will result in lack of identification of all applicable control modules, and WILL result in a flash failure.

# ① NOTE

#### **KESSY Vehicles!**

- If loss of communication between the reader coil and the key occurs during the flash, it may damage a control module.
- If equipped with a removable reader coil cap, it is REQUIRED to remove the reader coil cap and insert the key into the reader coil, or secure the key in close proximity to the reader coil throughout the flash process.
- If the reader coil cap is not removable, it is REQUIRED to secure the key to the steering column in close proximity to the reader coil using a residue-free adhesive or tape, an elastic cloth or stretch bandage, or other improvised retaining device.





#### RISK of Scan Tool Damage!

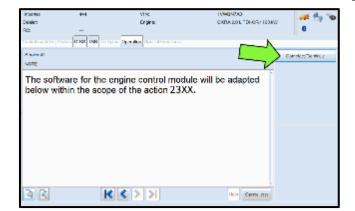
Do not leave the scan tool on the windshield during the flash process, as it is possible that the windshield wipers may cycle.

- Once the GFF scan is complete, verify that the ECM, TCM, and BCM are properly identified. (EXCEPTION: No BCM flash is applicable for 2009 Jetta, and Beetle/Beetle Convertible.)
  - If all applicable modules have not been identified, right click on the module not identified and select "Identify Control Module".
  - Failure to identify all applicable control modules before the flash process WILL result in a flash failure.
- Once all modules have been identified, select "Special functions".
- Select the test plan "Adapt software, diesel, exhaust EA189 action 23XX" <as shown>.
- Select "Perform test" <arrow>.

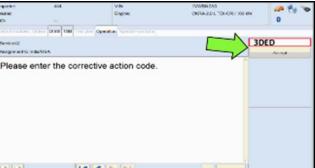


#### RISK of Improper Repair!

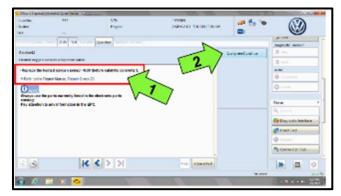
- DO NOT SELECT the normal test plan for "Adapting Software".
- ONLY SELECT the test plan "Adapt software, diesel, exhaust EA189 action 23XX" to perform this repair.
- Verify that all applicable control modules have been identified.
- Select "Complete/Continue" <arrow> after the control module adaptation, action 23XX note appears.

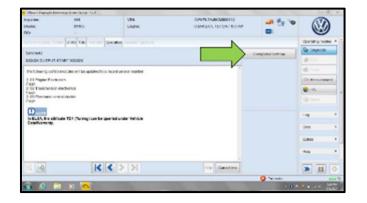










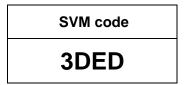


# NOTE

#### Using Bluetooth for this action is PROHIBITED!

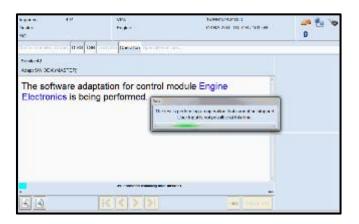
Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM flash process is not covered.

Enter the corrective action code (SVM code) as listed below.



- Select "Accept" <arrow>.
- After selecting "Accept", a self-check routine that tests the integrity of the Heated Oxygen Sensor -G39- occurs in the background. This self-check is automated and requires no input to initiate.

- You may receive the message "Replace the heated oxygen sensor -G39- (before catalytic converter), Refer to the Repair Manual, Repair Group 23" <arrow 1>:
  - If Campaign 24CV has NOT been completed, STOP and perform that action at this time. When complete, return to the beginning of Section F to restart the flash process.
  - If Campaign 24CV has been completed, select "Complete/Continue" <arrow 2> to bypass this operation and proceed to the next step.
- Select "Complete/Continue" <arrow> to begin the software update process.



• Observe flash process and follow any on-screen prompts to complete the test plan.

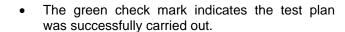


- Follow all prompts as requested per the test plan.
  - Switch the ignition ON or OFF when requested to do so.
  - Select "Complete/Continue" <arrow> when prompted to do so.



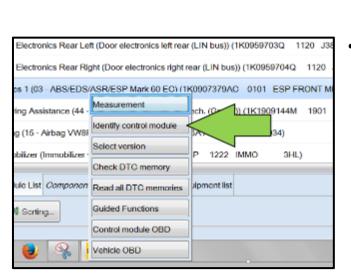
# . NOTE

- It is <u>IMPERATIVE</u> that <u>ALL</u> of the ignition cycle on/off delay requests are fulfilled in their entirety during this flash process <arrow 1>.
- Failing to wait for the ignition on/off timing cycle to complete (progress bar and countdown timer <arrow 2>) before cycling the ignition on/off MAY damage a control module.
- Damage to control modules as a result of failing to wait the specified time displayed by the progress bar and countdown timer
   <arrow 2> are <u>NOT</u> covered under this action.









# U NOTE

#### In the event of a Flash Malfunction!

In the event of a flash error or malfunction, **STOP**. **DO NOT** exit the ODIS session, disconnect the scan tool, attempt the flash again, or continue further in the test plan.

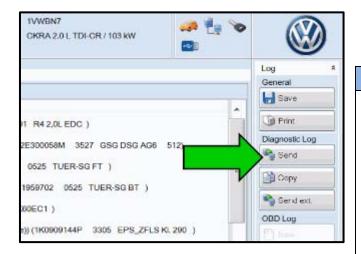
Create a VTA ticket and allow the VW Technicians Helpline to provide direction with flash failures.

#### --IMPORTANT!-

#### 2009 Model Year Only:

If the Mechatronic unit (TCM) failed to update, your vehicle may require a Mechatronic unit replacement. Create a VTA ticket and allow the VW Technicians Helpline to provide direction with ANY flash failures. If required, you will be directed to order a new Mechatronic unit.

- For vehicles that successfully complete the flash operation:
  - Proceed to the next step.
- In the event of a flash failure due to Mechatronic (TCM) unit that per VTA assistance requires a Mechatronics replacement:
  - Proceed to Section G and replace the Mechatronic unit.
  - After the Mechatronic unit has been replaced, you will be directed to return to the beginning of **Section F** to restart the Software Update Procedure.
- After the software update is completed and before sending the GFF Log Online:
  - Select the "Control Module" tab.
  - Scroll down and right click on Address Word 0001/ Engine Control Module.
  - Select "Identify Control Module" <arrow>.



 At the end of the diagnostic session, Select "Send" <arrow> and follow the prompt for sending the log on-line.

# ! NOTE

#### RISK of Non-payment!

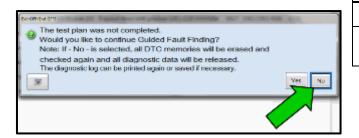
- Diagnosis logs must be sent on-line after the flash process to be considered for reimbursement.
- Verify that no other Campaigns or operations are performed during this ODIS diagnostic session before sending the log, and verify that the Engine Control Module has been reidentified.

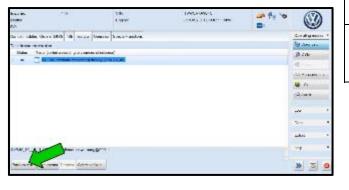


Technicians may find it helpful to also store the log on a USB stick for back-up.



When exiting GFF, it is important to select "No" <arrow>.





# i TIP

It is possible after the flash that the TPMS light may be illuminated. Follow test plan "03 – Tire pressure monitoring display" <as shown>.

- If TPMS light illuminates, follow test plan "03 – Tire pressure monitoring display" by selecting "Perform test" <arrow>.
- End the diagnostic session fully, exit the scan tool, and disconnect the VAS tester.
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform test drive.



<u>DO NOT drive</u> vehicle without having both new software and new hardware as doing so will damage to the newly installed components.

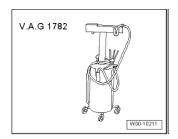
#### **Proceed to Section H**

Section G – Replace Mechatronic Unit for dual clutch gearbox, Criteria 02 Model Year 2009, ONLY if required per VTA assistance

### **Required Tools**



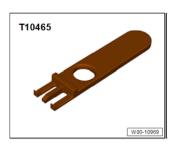
Torque wrench -V.A.G 1331-(or equivalent)



Used oil collection and extraction unit -V.A.G 1782-(or equivalent)



Adapter for filling oil -VAS 6262 A-

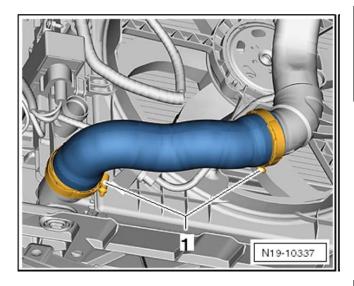


Release tool -T10465-

## **Mechatronic Replacement Instructions**

#### General information about removing Mechatronic unit with gearbox installed:

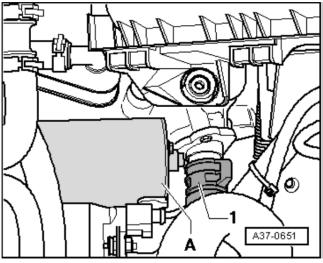
- Always make sure that no dirt can enter an "open" gearbox.
- Dirt or contaminants entering an "exposed" mechatronic unit for dual clutch gearbox -J743- and/or oil pump can lead to gearbox failure.
- Please refer to the notes on the oil filter change regarding "dirty oil".
- The mechatronic unit can stick on the dowel pins when the gearbox is very warm. Then let the gearbox cool off, and only remove/install a mechatronic unit into the gearbox when cooled to ambient temperature.
  - Move selector lever to position "P".
  - Disconnect battery ground connection.
  - Remove underbody noise insulation.





It may be necessary to remove additional components not listed in these repair instructions to create enough space to remove the Mechatronic unit based on the particular vehicle configuration.

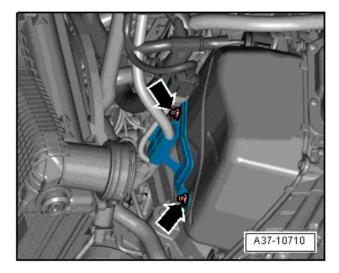
- Remove connecting hose between charge air cooler and charge air pipe.
- If required for additional clearance; remove engine cooling fan support, air conditioning lines, electrical harnesses and bracketing, or other components as necessary.



# U NOTE

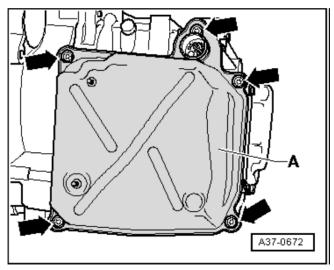
Risk of damaging mechatronic unit for dual gearbox -J743- beyond repair through static discharge.

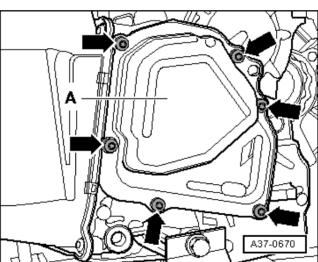
- Do not touch the contacts in the connector of the mechatronic unit for dual clutch -J743- by hand
- Electrostatically discharge by touching a grounded object by hand (without gloves).
- Release locking mechanism of connector <1> for mechatronic unit by turning it in counterclockwise direction, then and pull off the connector.

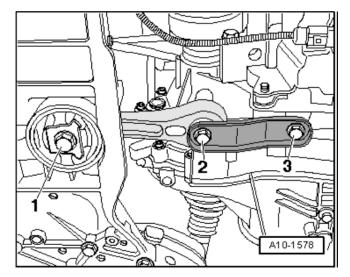


- Remove electrical wiring and retainer bracket from gearbox cover at front <arrows>.
- Raise the lines near the cover and secure them out of the way with a tie strap, or equivalent.

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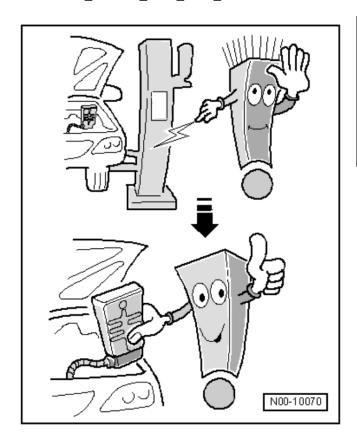
- Position used oil collection and extraction unit -V.A.G 1782- under gearbox in area of "large" cover.
- Loosen bolts <arrows> of gearbox cover in diagonal sequence and remove. Hold cover when doing this.
- Allow oil to drain out and then remove cover with seal.

# U NOTE

Approximately 3 liters of oil will drain from the unit. The "small" oil pump cover, as well as the gasket and the bolts of the gearbox cover must always be replaced when installing the new Mechatronic unit.

 Remove oil pump cover <A> by removing bolts <arrows>.

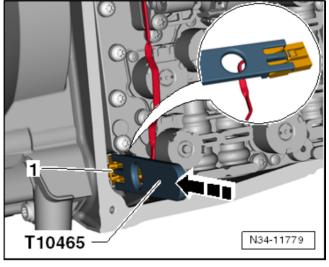
• Disconnect the pendulum support to gearbox by removing bolts <2 and 3>.



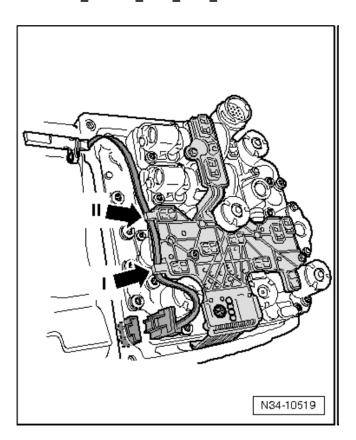
# ① NOTE

Risk of damaging mechatronic unit for dual gearbox -J743- beyond repair through static discharge.

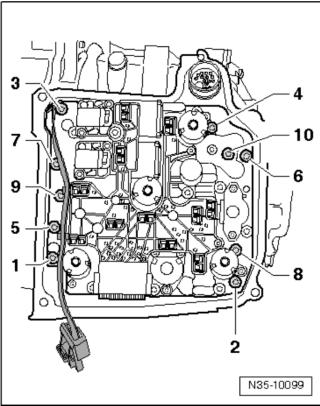
- Do not touch the contacts in the connector of the mechatronic unit for dual clutch -J743- by hand.
- Electrostatically discharge by touching a grounded object by hand (without gloves).



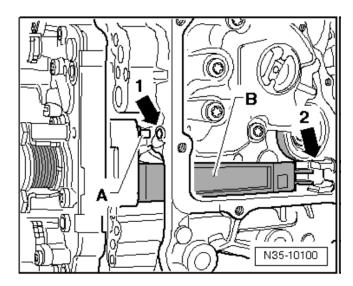
- Release connector <1> of gearbox input speed sender -G182- and clutch temperature sender -G509- using release tool -T10465-.
- · Carefully pull off the connector.



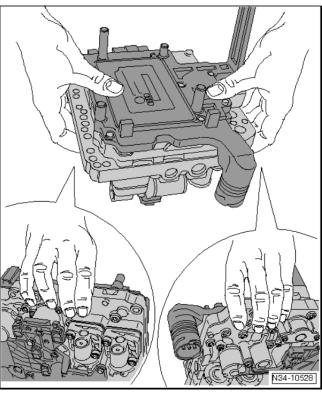
 First, pull the line out of lower clip <arrow l>, then remove it from upper clip <arrow ll> and lay to side. Use caution when removing to not kink line.



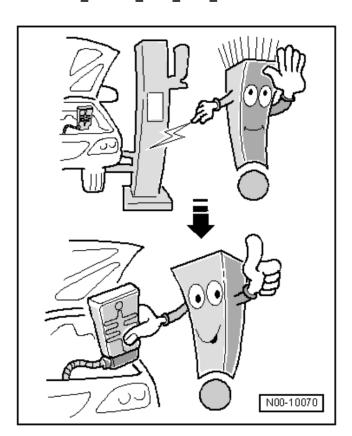
 Loosen and remove the securing bolts
 through 10> in the sequential order given in the image to the left.



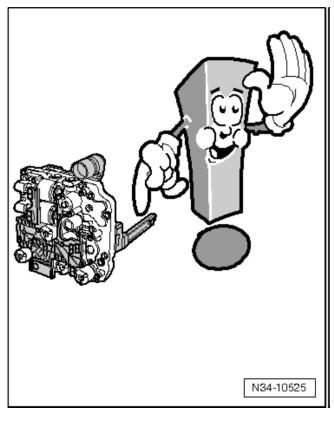
- Carefully pull mechatronic unit out of gearbox housing so that sender arm <B> on back is no longer in gearbox housing.
- When handling mechatronic unit, pay special attention to the "long" sender arm <B>.
- Carefully swing mechatronic unit for dual clutch gearbox -J743- downwards.



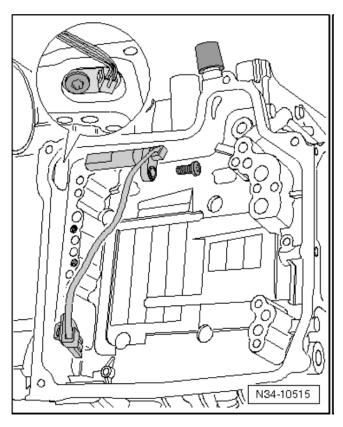
- Set mechatronic unit to the side properly.
- Never lift mechatronic unit on "sender arm" or lay it on arm.



 Before touching the new mechatronic unit, touch a grounded object (without gloves).

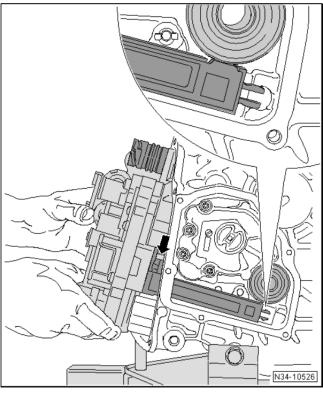


• If "arm" is damaged, mechatronic unit must be replaced.

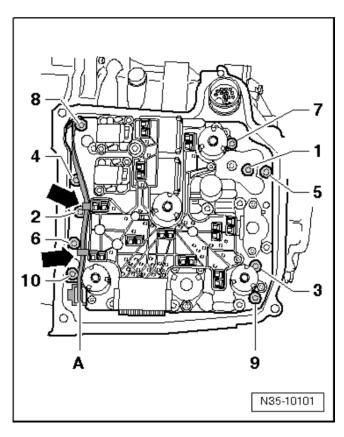


# U NOTE

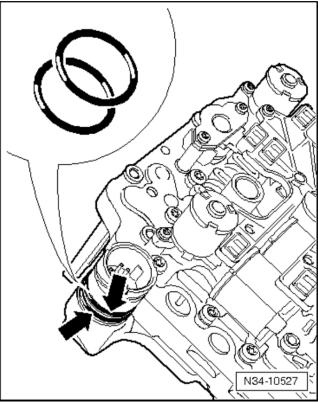
- Mechatronic unit for dual clutch gearbox -J743and gearbox should be at same temperature.
   This stops pins from "jamming" during insertion.
- Before installation of mechatronic unit, make certain that gearbox input speed sender -G182- with oil temperature sender in multiplate clutch -G509- is installed.
- Do not pinch wiring.



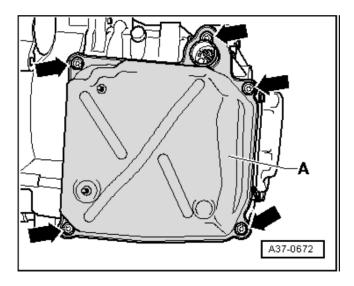
- Carefully place mechatronic unit on dowel pins <arrow> of gear housing. Ensure that "sender arm" locates and locks into position <inset image>.
- Hold mechatronic unit upwards for this purpose, as shown.
- Sender arm is not allowed to strike the sender wheel.
- Verify that the mechatronic unit has made contact correctly before continuing.



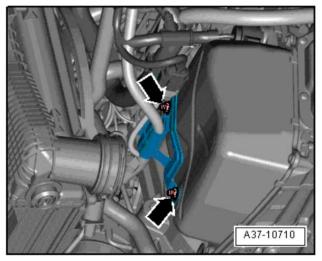
- Screw in new bolts in the numerical sequence shown <1 through 10> in order until hand-tight.
- Tighten bolts in the numerical sequence shown <1 through 10> to 5 Nm + 90° (1/4 turn) further.
- Attach wiring harness with connector <A> first in upper retaining lug, and then in lower <arrows>.
- Push in on the connector <A> until it is fully engaged.



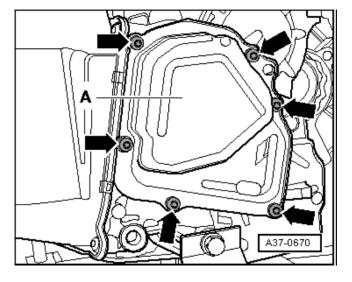
- Apply a thin coat of dual clutch gearbox oil to the new O-rings on the Mechatronic unit.
- Replace the seal on the gearbox cover.
- Clean the sealing surface on gearbox.
- Ensure proper seating of seal.



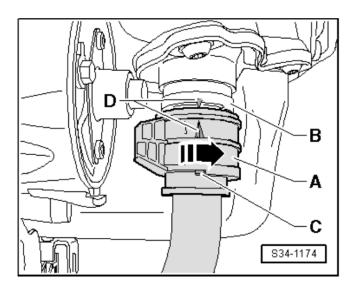
- Place gearbox cover <A> over mechatronic unit, ensuring that no wiring is pinched or trapped in the process.
- Insert new bolts <arrows> and tighten diagonally in several stages to 10 Nm.



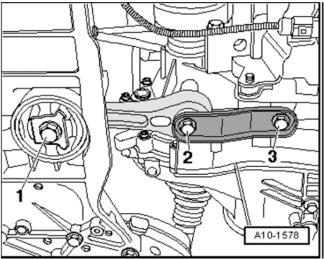
- Fit cable retainer to gearbox cover and tighten nuts <arrows> to 10 Nm.
- Reinstall any hoses, lines, or wiring harness connections that were relocated during disassembly to their original position, and tighten all fasteners securely as required to the proper torque specification.



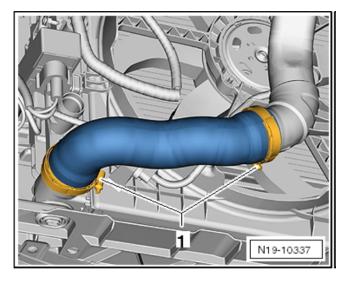
 Set new oil pump cover <A> in place and tighten bolts <arrows> diagonally in several stages to 8 Nm



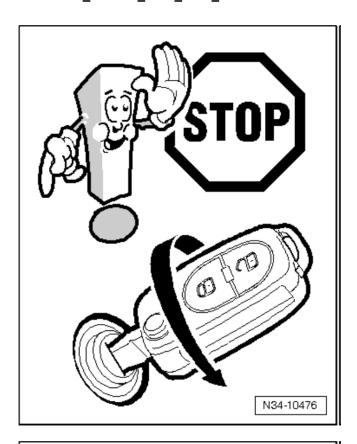
- Fit connector <A> of mechatronic unit for dual clutch gearbox -J743- as follows:
- Arrows <D> on mechatronic unit <B> and connector <A> and also lug <C> must all be in line.
- Carefully fit connector <A> as far as it will go and turn the locking mechanism in clockwise direction to lock <direction of arrow>.



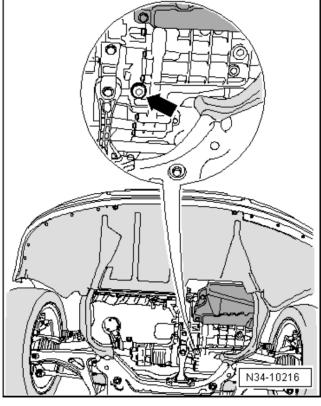
 Connect pendulum support to gearbox using new bolts and tighten to 40 Nm + 90 degrees (for grade 8.8 bolts), or 50 Nm + 90 degrees (for grade 10.9 bolts).



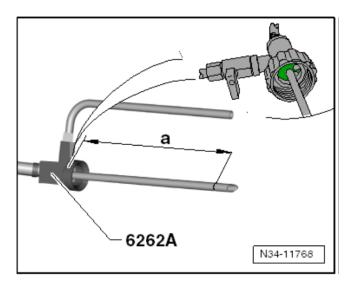
- Reinstall connecting hose between charge air cooler and charge air pipe.
- Reinstall any parts which may have been removed from the vehicle.
- Reconnect the battery, making sure to following all proper procedures for battery connections.



- Do not start engine!
- If required due to fluid contamination, replace the oil filter.



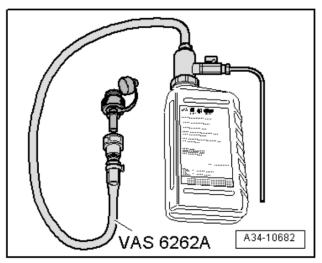
 Remove oil drain plug close to pendulum support <arrow>.



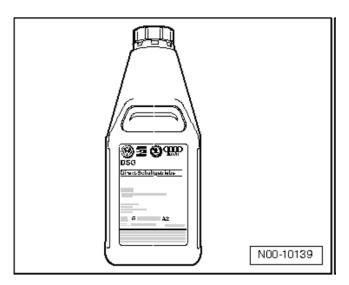
- Before screwing adapter for oil filling
   -VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension <a> and shorten if required.
  - Dimension <a> = 210 mm



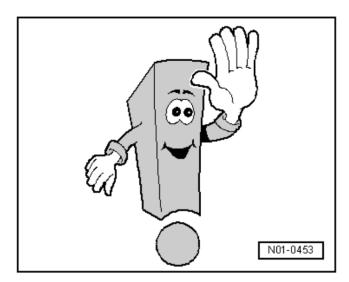
The dimension <a> is measured from the shaft (green area in the inset image) of the adapter for oil filling -VAS 6262 A-.



Screw adapter of adapter for filling oil
 -VAS 6262 A- hand tight into inspection hole.



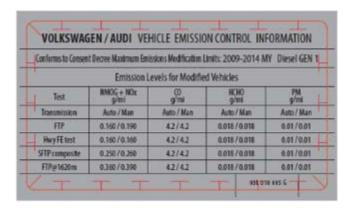
- Shake oil bottles before opening them.
- Screw on oil filler adapter -VAS 6262 A- onto oil bottle.
- Fill the gearbox with three (3) liters of oil.
- To change bottle, shut off tap or hold adapter for filling oil -VAS 6262 A- higher than gearbox.
- Start the engine and check and continue to replenish oil until filled to specification. Adapter for filling oil -VAS 6262 A- remains installed initially.
- Check oil level and top off as required.



- Fluid Level Checking Requirements:
  - The vehicle is level and all hoist mounts are the same height.
  - The noise insulation has been removed.
  - The Vehicle Diagnostic Tester is connected.
  - To begin working, the oil temperature should not be higher than 45 °C (113 °F).
  - Test temperature: 35 to 45 °C (95 to113 °F).
- Checking Fluid Level:
  - Connect the Vehicle Diagnostic Tester and identify the vehicle in Guided Functions.
  - Select DSG® Transmission.
  - Select Check Fluid Level.
- Install the oil drain plug with new gasket and tighten to 45 Nm.
- Reinstall noise insulation underbody panel.
- Conduct basic adjustment of mechatronic unit for dual clutch gearbox -J743-.

Proceed to Section F to perform the flash operation.

# Section H – Supplemental Vehicle Emissions Control Information Label



03L 010 005 G

# Install supplemental Vehicle Emissions Control Information Label

# i TIP

- The surface where the label is to be installed must be clean, dry, and free from oil residue prior to installing the label.
- Label must NOT cover any existing label(s).
- Label must be installed in locations shown.
- Photo documentation of label installed is required.



- Open the hood and choose a painted surface on the underside of the hood to place both the supplemental Vehicle Emissions Control Information Label and the TDI Recall Proof of Completion Label. Place the labels as close to each other as possible, and as close to the original Vehicle Emissions Control Information Label as possible.
- Choose the correct Vehicle Emissions Control Information Label part number according to the vehicle model. DO NOT INSTALL THE INCORRECT LABEL.
- Clean the painted surface on the underside of the hood where the labels are to be installed. The surface should be oil free.
- Install the supplemental Vehicle Emissions Control Information Label onto the chosen painted surface on the underside of the hood near the original VECI Label. Label must **NOT** cover any existing label(s).
- Take a close up photograph the label and upload it to the TDI INFORM Tool. <u>NOTE:</u> The photograph should be taken at a close enough distance, at high enough resolution, and with enough visual clarity to easily read the <u>Part Number</u> listed on bottom right hand corner of the label. The part number listed on the Label <u>MUST</u> be legible to be considered for Warranty Reimbursement.
- Proceed to Section I

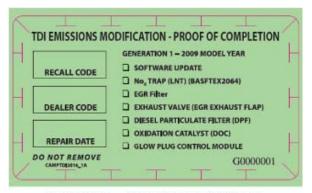


#### RISK of Non-payment!

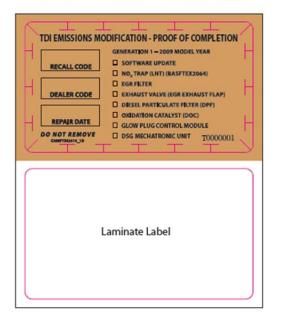
The <u>Part Number</u> listed on the bottom right hand corner of the label <u>MUST</u> be legible in the photograph uploaded to the TDI INFORM Tool for the claim to be considered for Warranty Reimbursement.

If the <u>Part Number</u> listed on the bottom right hand corner on each label is <u>NOT</u> legible in the photograph uploaded to the TDI INFORM Tool, the Warranty Claim will be denied.

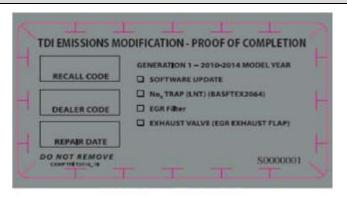
# Section I - Install TDI Emissions Modification Proof of Completion Label



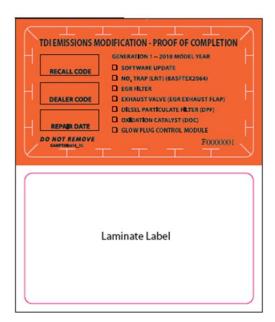
MY 2009 – CAMP TDI 2016\_1A



 MY 2009 w/ Mechatronics replacement – CAMP TDI 2016 1D



MY 2010-2014 - CAMP TDI 2016\_1B



 MY 2010 w/ One-Piece DPF and NOx Catalyst Pipe - CAMP TDI 2016 1C



Clean the surface next to the newly installed Vehicle Emission Control Information Label where the TDI

Recall Proof of Completion label is to be installed on a painted surface on the underside of the hood.

- Fill out completely the Recall Code, Dealer Code, and Repair Date and affix TDI Recall Proof of Completion label onto a painted surface on the underside of the hood next to the newly installed Vehicle Emission Control Information Label. Label must **NOT** cover any existing label(s).
- Choose the correct part number based on the vehicle model year AND any additional considerations such as Mechatronics replacement for some 2009 MY vehicles, or One-piece DPF/NOx trap systems for some 2010 MY vehicles. DO NOT INSTALL THE INCORRECT LABEL.
- Apply clear overlay (provided on bottom of the TDI Recall Proof of Completion Label backer).
- Take a close up photograph the label and upload it to the TDI INFORM Tool. <u>NOTE:</u> The photograph should be taken at a close enough distance, at high enough resolution, and with enough visual clarity to easily read the <u>Part Number</u> listed on the bottom left hand corner label. The part number listed on the Label <u>MUST</u> be legible to be considered for Warranty Reimbursement.
- · Close the hood.

Proceed to Section J (California only).

Proceed to Section K (All without California).



#### RISK of Non-payment!

The <u>Part Number</u> listed on the bottom of the label <u>MUST</u> be legible in the in the photograph uploaded to the TDI INFORM Tool for the claim to be considered for Warranty Reimbursement.

If the <u>Part Number</u> listed on the bottom of the label is <u>NOT</u> legible in the photograph uploaded to the TDI INFORM Tool, the Warranty Claim will be denied.

# Section J – California Only Requirements

# CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMIS\_CAL VW). Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.vwhub.com.



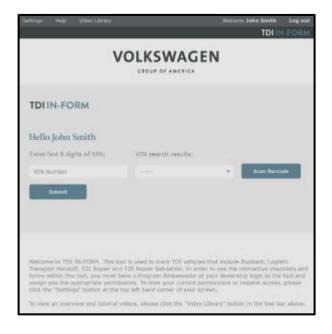
Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV <u>only upon</u> request.

#### Proceed to Section K

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# Section K – Service Modification Documentation Requirements





## Job Roles Summary:

- Service Consultant Initiates validation tool.
- Service Technician Completes service modification requirements.
- Manager Validates the modification was properly completed.
- Dealer Representative/Cashier Prints receipt, fuel economy label and delivers to customer.
- Warranty Administrator Enters claim into the SAGA system.

# i TIP

To access the interactive forms go to the TDI Settlement

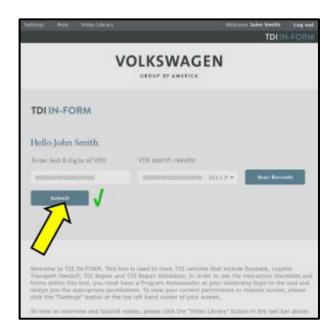
Program microsite on vwhub.com. Then Select the "TDI IN-FORM" Button from the lower left side of the microsite navigation.

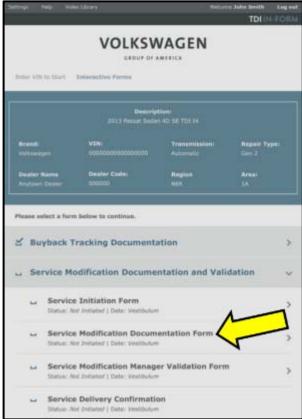
- Enter the "TDI IN-FORM" tool <arrow>.
- Enter the VIN for the vehicle that requires documentation.

# i TIP

The VIN can be manually typed in or using an iPad or iPhone running i0S 9+, the camera can be used to scan the VIN Barcode.

Please note ambient lighting, camera quality, etc. may impact the effectiveness of the VIN scanning feature.





# i TIP

After the VIN has been entered, the system will automatically validate that it is a TDI VIN. This will be indicated by a green check mark that will appear next to the VIN.

 Validate the VIN is correct for the vehicle, then click the "Submit" button <arrow>.

- Select "Service Modification Documentation Form" <arrow>.
- Follow the on-screen prompts completely.



## RISK of Non-payment!

Not using the IN-FORM tool to document and validate the modification will stop the processing of payment for your dealership even if the modification has been completed.

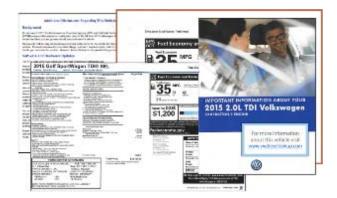


Upon completion of the Service Modification Documentation Form, the Manager must validate the repair in the IN-FORM tool.

#### ALL WORK IS COMPLETE for this Repair.



At this time, refer to ELSA and address any additional open campaigns/recalls. If the 24CV Campaign has not yet been completed, refer to that action at this time. It is required to complete the 24CV Campaign **PRIOR** to this action in order to complete the TDI IN-FORM Tool requirements.



# • NOTE

#### **Vehicle Sales REQUIREMENTS!**

Additional <u>**REQUIRED**</u> steps are necessary for NEW vehicles.

 For NEW vehicles, obtain VIN-specific and other necessary items according to Appendix A. Complete Appendix A in addition to this repair.

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Volkswagen dealer. ©2018 Volkswagen Group of America, Inc. All Rights Reserved.

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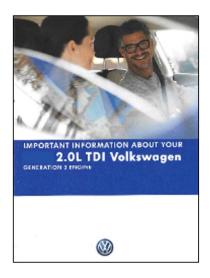
## Appendix A - Requirements for Vehicles within "New" Vehicle Inventory





#### Vehicle Sales REQUIREMENTS!

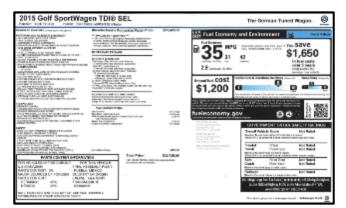
Additional <u>**REQUIRED**</u> steps are necessary for NEW vehicles prior to sale <similar information pictured left>.



Open glove box and insert the 2.0L TDI Generation
 1 Information Packet <similar example pictured left>.



 Insert the Owner's Manual Supplement into the Owner's Manual.





- Remove original Monroney Label and discard.
- Install new Monroney Label <similar example pictured left> on the rear passenger side window <similar example pictured below>.



Monroney Labels are VIN-specific. Obtain new label as required from Sales department, Service Manager, General Manager, or other authorized dealer personnel.

 Install new Fuel Economy Label <example pictured left> to the right of the new Monroney Label. If necessary, use the passenger front window <examples pictured below>.

# i TIP

Fuel Economy Labels are VIN-specific. Obtain new label as required from Sales department, Service Manager, General Manager, or other authorized dealer personnel.

• See Examples of properly installed labels:

Examples of properly Installed Monroney and Fuel Economy Labels cpictured below> on various vehicle models.

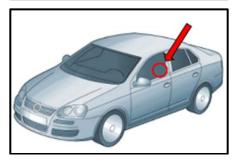








For more information about this vehicle visit www.vwdiesellookup.com



- Place the "more information" permanent window sticker <pictured left> on the front driver-side window in the lower right corner of the window <arrow>. Install the sticker from the inside of the window.
  - Affix the "more information" sticker to the front driver-side window as necessary either above, beside, or under any other required State and/or Local Labels (example, California Prop 65).

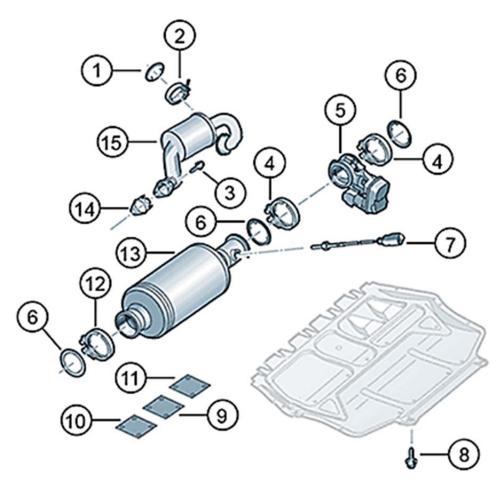


"More information" permanent window stickers can be obtained from the Sales department, Service Manager, General Manager, or other authorized dealer personnel.

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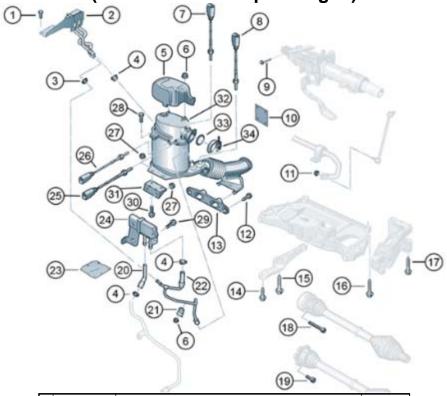
# Appendix B - Parts Kits Identification and Details

# Criteria 01 and 02 - 2.0L Base Kit 1 - 1K0 298 101 A (All Vehicles)



#	Part	Name	Quantity Required Per Vehicle
1	1K0253115AG	Seal	1
2	1K0253725F	Clamp	1
3	N10642103	Bolt (M8x25)	2
4	1K0253725B	Clamp (narrow)	2
5	1K0253691J	Exhaust door control unit -J883-	1
6	1K0253115AE	Seal	3
7	03L906262N	Oxygen sensor after catalytic converter -G130-	1
8	1K0825951	Bolt self-locking (M6x20)	3
8	WHT000729A	Bolt self-locking (M8x20)	3
9	1K0971461D	Heat shield (Cable for Exhaust door control unit –J883-)	1
10	1K0971461E	Heat shield (Cable for Oxygen sensor –G130-)	1
11	1K0971461F	Heat shield (Cable for Oxygen sensor and Exhaust door control unit)	1
12	1K0253725	Clamp	1
13	1K0254402AX	NOx storage catalytic converter	1
14	03G131547H	Seal	1
15	1K0253120B	Exhaust gas recirculation filter	1

# Criteria 01 ONLY - 2.0L Base Kit 2 - 1K0 298 101 X (2009 Jetta/Jetta SportWagen)



#	Part	Name	Quantity Required Per Vehicle
1	N90737105	Bolt	1
2	1K0131552B	Differential pressure sender -G505-	1
3	3C0131483A	Spring clamp	3
4	4B0422379	Spring clamp	1
5	5N0131783	Heat shield	1
6	N02300215	Nut M6	4
7	03L906262B	Oxygen sensor -G39-	1
8	03L906088EG	Exhaust gas temperature sender –G648-	1
9	N01033513	Bolt for U-joint	1
10	5N0971461	Heat shield	1
11	N0150816	Nut	2
12	N10240003	Bolt (M8x32)	2
13	1K0253144BC	Exhaust system bracket	1
14	N91066101	Bolt (M10x35)	1
15	N91167101	Bolt (M10x75)	1
16	WHT000431A	Bolt M12x110	2
17	N91039802	Bolt M12x90	4
18	N90991102	Bolt (M10x52) - Manual Transmission	6
19	N90991002	Bolt (M10x23) - DSG Transmission	6
20	03G131525	Hose for control line	1
21	1K0131649	Retainer	1
22	1K0131552A	Control line	1
23	1K0971461C	Heat shield	1
24	076906051A	Exhaust pressure sensor 1 -G450-	1
25	03L906088T	Exhaust gas temperature sender – G448-	1
26	03L906088J	Exhaust gas temperature sender – G495	1
27	N01508315	Nut M8	4
28	N10653102	Bolt	1
29	N10456201	Bolt M6x25	1
30	N90786502	Bolt	2
31	1K0253463AF	Bracket	1
32	1K0254708GX	Particulate filter	1
33	04L253115A	Seal	1
34	1K0253725	Clamp	1